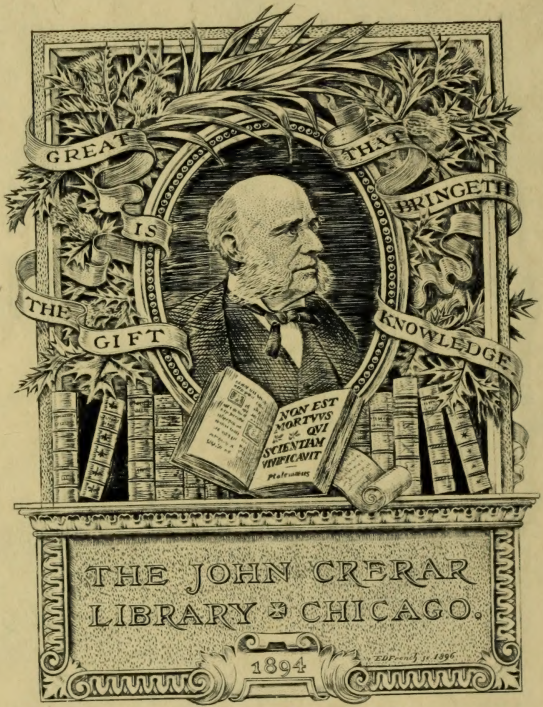
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Agricultural + Mechanical College.

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BULLETIN

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

N. S. Vol. 1 JULY, 1913 No. 1

THIRTY-SEVENTH

ANNUAL CATALOGUE

SESSION 1912-13

Published quarterly by the Agricultural and Mechanical College
of Texas

Application for entry as second-class matter at the postoffice at College Station, Texas,
pending.

AUSTIN, TEXAS
VON BOECKMANN-JONES CO., PRINTERS
1913

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1913

January.

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COLLEGE CALENDAR.

1913.

Deficiency Examinations, Monday, Tuesday, September 22, 23.
First term begins Tuesday, September 23.
Registration of new students, September 23.
Entrance Examinations, September 24, 25.
Registration of old students, September 25.
Recitations begin September 26.
National Holiday, Thanksgiving Day.
Christmas Holidays begin Sunday, December 21.

1914.

Last Day of the Christmas Holidays, Sunday, January 4.
Recitations resumed, Monday, January 5, 8 a. m.
Short Winter Course in Highway and Rural Engineering, begins Monday, January 12.
Second Term begins, Thursday, February 5.
National Holiday, February 22.
State Holiday, March 2.
State Holiday, April 21.
Commencement Sermon, Sunday, June 7.
Exhibition of Departments and of Work of Students, June 8.
Commencement Day, June 9.

BOARD OF DIRECTORS.

(Appointed January 1, 1913.)

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WALTON PETEET	*Fort Worth.*
J. ALLEN KYLE	*Houston.*
L. J. HART	*San Antonio.*
R. L. BENNETT	*Paris.*
E. H. ASTIN	*Bryan.*
ED. R. KONE, Commissioner of Agriculture, *ex-officio*	*Austin.*

IKE S. ASHBURN, Secretary	*College Station.*

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Dean of the School of Engineering.

E. J. KYLE, M. S. A.,
Dean of the School of Agriculture.

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Commandant of Cadets.

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Superintendent of Extension.

CHARLES E. FRILEY.
Registrar.

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Physical Director.

F. D. STEGER,
Y. M. C. A. Secretary.

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Assistant Commandant.

IKE S. ASHBURN.
Publicity Agent.

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Professor of Civil Engineering.

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Professor of Horticulture.

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Professor of History.

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Professor of Electrical Engineering.

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Professor of Entomology.

J. OSCAR MORGAN, M. S. A., Ph. D.,
Professor of Agronomy.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

A. MITCHELL, B. C. E.,
Professor of Drawing.

*J. W. KIDD, B. S., E. E.,
Professor of Physics.

---

*Resigned Nov. 1, 1912.

R. J. POTTS, A. B., C. E.,
Professor of Highway Engineering.

LEVI G. BROWN, First Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics and Commandant of Cadets.

S. J. FOUNTAIN, B. S.,
Professor of Architecture.

J. W. RIDGWAY, M. S.,
Acting Professor of Dairy Husbandry.

W. T. WRIGHT, B. S., A. B.,
Acting Professor of Physics.

R. F. SMITH,
Associate Professor of Mathematics.

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Visitor of Schools.

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Associate Professor of Veterinary Science.

J. E. LEAR, E. E.,
Associate Professor of Electrical Engineering.

***HARPER DEAN, B. S.,
Associate Professor of Entomology.

H. E. SMITH, M. E.,
Associate Professor of Mechanical Engineering.

J. J. RICHEY, C. E.,
Associate Professor of Civil Engineering.

C. C. HEDGES, A. B., Ph. D.,
Associate Professor of Agricultural Chemistry.

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Assistant Professor of English.

J. W. MITCHELL, A. B.,
Assistant Professor of Mathematics.

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Assistant Professor of Mathematics.

C. S. TATUM, B. S.,
Assistant Professor of Textile Engineering.

J. D. GARNER, A. M., LL. B.,
Assistant Professor of Mathematics.

J. B. CROCKETT, C. E.,
Assistant Professor of Civil Engineering.

**Office abolished Feb. 6, 1913. ***Resigned April 1, 1913.

S. A. McMILLAN, B. S.,
Assistant Professor of Agronomy.

H. E. HAYDEN, M. A.,
Assistant Professor of Biology.

G. H. BLACKMON, B. S.,
Assistant Professor of Horticulture.

O. B. WOOTEN, B. S.,
Assistant Professor of Electrical Engineering.

F. B. PADDOCK, B. S.,
Assistant Professor of Entomology.

C. S. TEMPLETON, B. S.,
Assistant Professor of Animal Husbandry.

A. T. POTTS, B. S.,
Assistant Professor of Horticulture.

J. A. HERRINGTON, B. S.,
Instructor in Mechanical Engineering, Superintendent of Shops.

D. C. JONES, A. B.,
Instructor in Mathematics.

L. L. CHAPPELLE,
Instructor in Mechanical Engineering.

G. A. GEIST, B. S.,
Instructor in Drawing.

IRBY C. NICHOLS, B. S., M. A.,
Instructor in Mathematics.

R. W. CANFIELD, A. M.,
Instructor in History.

R. G. BRESSLER, M. A.,
Instructor in English.

W. H. McPHEETERS, B. S.,
Instructor in Physics.

D. B. COFER, A. B.,
Instructor in English.

HUGH CASSIDY, M. A.,
Instructor in Biology.

W. P. NELSON, Jr.,
Instructor in Chemistry.

E. W. LEHMANN, B. S.,
Instructor in Physics.

F. J. SKEELER, B. S.,
Instructor in Physics.

R. J. WINDROW, B. S.,
Instructor in Civil Engineering.

J. D. BOND, B. A.,
Instructor in Mathematics.

W. W. WOODS,
Instructor in English.

E. C. ROSS, A. M.,
Instructor in English.

BONNER FRIZZELL, A. B., B. S.,
Instructor in English.

P. G. GUNTER, M. A.,
Instructor in English.

*A. L. HARRIS, B. S.,
Instructor in Agronomy.

F. W. REDLICH, B. S.,
Instructor in Drawing.

**C. M. HAINES, B. S.,
Instructor in Mechanical Engineering.

R. C. DUNN, D. V. M.,
Instructor in Veterinary Science.

***J. H. PROCTOR, B. S.,
Instructor in Electrical Engineering.

WILL McCLAIN WINTON, M. Sc.,
Instructor in Biology.

R. B. PEARCE, B. S.,
Instructor in Civil Engineering (Farm Terracing).

H. G. CARPENTER, B. S.,
Instructor in Dairy Husbandry.

E. E. McADAMS, B. S.,
Instructor in Physics.

L. B. McMILLAN, M. E.,
Instructor in Mechanical Engineering.

F. J. BECHERT, M. E.,
Instructor in Mechanical Engineering.

B. J. MANSFIELD, B. S.,
Instructor in Drawing.

F. W. BELL, B. S. A.,
Instructor in Animal Husbandry.

L. L. CLICK, B. S. E.,
Instructor in English.

---

*Resigned Oct. 1, 1912. **Resigned Jan. 1, 1913. ***Resigned Feb. 1, 1913.

C. N. KENNEDY, B. S.,
Instructor in Animal Husbandry.

W. P. POWELL, M. A.,
Instructor in English.

C. A. WOOD, B. S.,
Instructor in Agronomy.

E. E. COEN, B. S.,
Instructor in Agronomy.

M. D. MORLEY, B. S.,
Instructor in Mechanical Engineering.

P. W. GUMAER, A. B., B. S.,
Instructor in Electrical Engineering.

M. K. THORNTON, B. S.,
Assistant in Chemistry.

J. W. NEWTON, B. S.,
Assistant in Chemistry.

C. K. STANDISH,
Assistant in Mechanical Engineering.

J. F. BROWN,
Student Assistant in Physics.

E. LANGFORD,
Student Assistant in Physics.

J. C. PATTERSON, B. S.,
Student Assistant in Dairy Husbandry.

COLLEGE EXTENSION.

C. M. EVANS, M. S. A.,
Superintendent Extension.

CHARLES B. NICHOLS,
Secretary.

H. H. WILLIAMSON, B. S.,
Assistant State Agent in Charge of Club Work.

L. H. SELLERS, B. S. A.,
In Charge of Correspondence Courses.

R. R. ROSA, B. S.,
Assistant.

W. F. PROCTOR,
State Agent in Demonstration Work.

J. L. QUICKSALL,
Assistant State Agent in Demonstration Work.

T. O. WALTON,
M. T. PAYNE,
WILLIAM GANZER,
G. W. ORMS,
District Agents in Demonstration Work.

MISS B. M. ROGERS,
Assistant in Charge of Girls' Club Work.

TEXAS AGRICULTURAL EXPERIMENT STATIONS.

Main Station, College Station.

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B. YOUNGBLOOD, M. S.,
Director.

M. FRANCIS, D. V. M.,
Veterinarian.

G. S. FRAPS, Ph. D.,
Chemist.

H. NESS, M. S.,
Horticulturist.

J. C. BURNS, B. S.,
Animal Husbandman.

WILMON NEWELL, M. S.,
Entomologist.

A. B. CONNER, B. S.,
Agronomist.

F. H. BLODGETT, M. S., Ph. D.,
Plant Pathologist and Physiologist.

REX E. WILLARD, B. S.,
Farm Management Expert.

HARPER DEAN, B. S.,
Assistant Entomologist.

J. B. RATHER, M. S.,
Assistant Chemist.

F. B. PADDOCK, B. S.,
Assistant Entomologist.

H. H. JOBSON, B. S.,
Assistant Agronomist.

H. SCHMIDT, D. V. M.,
Assistant Veterinarian.

WILLIAM LEVIN, A. B.,
Assistant Chemist.

H. B. SPAULDING, B. S.,
Assistant Chemist.

CHAS. A. FELKER,
Chief Clerk.

A. S. WARE,
Secretary.

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*Beaumont Rice Station	*E. M. Johnston.*
Beeville Sub-Station	*E. E. Binford.*
*Chillicothe Forage Crops Station	*R. W. Edwards.*
Denton Sub-Station	*T. W. Buell.*
Lubbock Sub-Station	*V. L. Cory.*
*Nacogdoches Sub-Station	*G. T. McNess.*
Pecos Sub-Station	*H. C. Stewart.*
Spur Sub-Station	*I. S. York.*
Temple-Belton Sub-Station	*A. K. Short.*
Troup Sub-Station	*W. S. Hotchkiss.*
Feeding and Breeding Station, College Station	———————

DIVISION OF FEED CONTROL.

B. YOUNGBLOOD,
Director.

W. L. BOYETT,
State Feed Inspector.

CHAS. A. FELKER,
Chief Clerk.

J. H. ROGERS,
J. W. MURPHY, B. S.,
W. H. WOOD,
T. H. WOLTERS,
Deputy Feed Inspectors.

OFFICE OF STATE CHEMIST.

G. S. FRAPS, Ph. D.,
State Chemist.

S. E. ASBURY, M. S.,
Assistant State Chemist.

T. L. OGIER, B. S.,
H. A. FREEMAN, B. S.,
J. COHEN, B. S.,
J. C. SUMMERS, B. S.,
Assistant Chemists.

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*Co-operating with the United States Department of Agriculture.

HISTORICAL SKETCH.

The Agricultural and Mechanical College of Texas, like the land grant institutions in other States of the Union, owes its origin to an act of Congress approved July 2, 1862. This act donated public lands to the several States and Territories which might provide colleges for the benefit of agriculture and the mechanic arts, and directed the Secretary of the Interior to issue land scrip to the States in which there was not the requisite quantity of public land. The act further directed that the money derived from this source should constitute a perpetual fund, the principal of which should remain forever undiminished, and the interest of which should be inviolably appropriated by each State to the endowment, support and maintenance of at least one technological college, whose leading object should be, without excluding other scientific and classical studies, and including military tactics, to teach branches of learning pertaining to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life. It was further provided that the provisions of the act should be formally accepted by the State Legislature. By joint resolution approved November 1, 1866, the Legislature of Texas accepted the provisions of the Congressional legislation, and accordingly there was issued to Texas scrip for 180,000 acres of public land, which was sold for $174,000. This amount was invested in Texas 7 per cent gold frontier bonds. At the time of the opening of the College there was an addition to the fund of accrued interest amounting to $35,000, which was invested in 6 per cent State bonds.

In an act approved April 17, 1871, the Legislature provided for the establishment of the Agricultural and Mechanical College. By the terms of this act and later acts, appropriations aggregating $187,000 were made for buildings and equipment. A commission to locate the College was created by the Legislature. After careful investigation, the commission accepted the proposition of the citizens of Brazos county, and located the institution on a tract of 2416 acres of land in that county. Finally, the constitutional convention of 1876 constituted the College a branch of the University of Texas, and, in accordance with the terms of the Federal legislation, designated it as an institution for instruction in agriculture and the mechanic arts and the natural sciences connected herewith. The convention further provided that the Legislature should have the right to levy taxes for the maintenance and support of the Agricultural and Mechanical College.

The College was formally opened for the reception of students October 4, 1876.

GROWTH OF THE COLLEGE.

Since 1876, by means of financial aid voted by Congress and of appropriations made by the State Legislature, there has been developed a considerable foundation at the College for instruction, for investigation, and for experiment. In 1887 Congress voted the sum of $15,000 a year to each State for the purpose of establishing experiment stations to conduct original research on the physiology of plants and animals, the diseases of plants and animals, the chemical composition of useful plants, the advantages of rotation of corps, climatology, analyses of soils and waters, the composition of manures, the value of grasses and forage crops, the composition and digestibility of the different kinds of food for domestic animals, the scientific and economic questions involved in the production of butter and cheese, and such other researches and experiments in agriculture as might be deemed advisable.

In 1890 Congress further appropriated the sum of $15,000 a year with an annual increase of $1000 for ten years, and provided that the amount appropriated should be equitably divided between the Agricultural and Mechanical College and an institution intended for the technical education of colored students.

In 1907 Congress appropriated the sum of $5000, with annual increase of $5000, for four years.

In 1895 the Legislature made provision for an experiment station at Beeville, and in 1900 for a second experiment station at Troup.

In 1910 eight additional stations were established in different parts of the State.

At College Station there are nine dormitories, an academic building in course of erection for offices and section rooms, a mess hall, an assembly hall, an agricultural and horticultural building, a chemical and veterinary building, a civil engineering building, an electrical engineering building, an experiment station building, a mechanical engineering building, a textile engineering building, a hospital, a veterinary hospital, a farm implement building, a natatorium, a water, ice and light plant, a laundry, a sewerage system, barns and outhouses, and residences for instructors and officers, with a total valuation of approximately $1,150,000.

GOVERNMENT.

The government of the College is vested in a Board of eight directors, appointed by the Governor for a term of two years. One of the directors is the Commissioner of Agriculture, who serves on the Board by virtue of his office.

The immediate regulation and direction of the affairs of the College are delegated by the Board of Directors to the President and Faculty.

ORGANIZATION.

The College comprises the School of Agriculture and the School of Engineering. The Faculty of the School of Agriculture, and the Faculty of the School of Engineering have supervision over the educational work of the respective schools. The Faculty of the College directs the general policy of the institution and has supervision over matters not specifically assigned to the other Faculties.

DEPARTMENTS.

The College has now in operation the following departments of instruction:

Agronomy.
Animal Husbandry.

Architecture.
Biology.
Chemistry and Chemical Engineering.
Civil Engineering.
Dairy Husbandry.
Drawing.
Electrical Engineering.
English.
Entomology.
History and Economics.
Horticulture.
Mathematics.
Mechanical Engineering.
Military Science and Tactics.
Physics.
Textile Engineering.
Veterinary Science.

Provision is also made for correspondence courses. See page 64.

OBJECTS.

The objects of the College are indicated in the provisions of the laws of Congress and of the State Constitution and statutes. Briefly stated, the College was established for the purpose of furnishing an opportunity to the young men of Texas to qualify themselves to do expert work in all industrial pursuits and professions; to furnish information of a scientific and practical character to the people of the State actually engaged in farming, in horticulture, in dairying, and in stock raising, and in every possible way to advance all industrial interests of the State. To meet the urgent demand for men of industrial skill, the work of the College has been so planned as to train men in the scientific principles of agriculture, horticulture, cattle raising and related pursuits, and in chemical, civil, electrical, mechanical and textile engineering, drawing and architecture. As rapidly as the funds of the College will allow, provision will be made for expert industrial work in all other directions.

The work of the College in behalf of those actually engaged in industrial pursuits is carried on through the experiment stations, including the main station established at College Station and the ten substations, through the divisions of agronomy, animal husbandry, chemistry, entomology, horticulture and veterinary science. Through the experiment stations information is furnished to farmers and others in the form of bulletins and through press notices and correspondence. At present there are 40,000 farmers whose names appear on the regular mailing list of the experiment station. As opportunity permits, the members of the stations and agricultural staffs, the superintendent of the extension department, the professor of highway engineering and the instructor in terracing visit different sections of the State for the purpose of giving institute lectures to various associations and gatherings of agriculturists. It will be seen that it is by no means the exclusive mission of the College to furnish instruction to the thousand or more students who matriculate in the institution; a much wider constituency than this is reached through the press, through correspondence and through lectures.

The military feature, made necessary by the acceptance of the Federal grants, is an important adjunct to the other work of the College. It is conducive to health and to bodily grace and strength, and cultivates habits of strict attention and of obedience, punctuality, neatness and regularity.

METHOD AND SCOPE OF INSTRUCTION.

In all the courses of instruction the fundamental idea is education in practical science, particularly in agriculture and in engineering. With this idea in view, instruction is given in English, history, economics, mathematics, physics, chemistry and in other studies which lie at the foundation of a sound education and furnish the best preparation for the more technical studies of the several courses. Instruction is given by the use of text-books, by lectures and recitations; also by practice in the shop, field, laboratory, and drawing room. These practical exercises have a high educational value, and serve a useful purpose in fixing and rendering clear the ideas presented in the class room; they have also a practical value, for they are, in great measure, examples of just such problems as the scientific agriculturist or engineer will encounter in the pursuit of his calling. For convenience of instruction, the classes are subdivided into sections of suitable size. Unannounced written exercises and tests are given at the discretion of instructors. Regular written examinations are held at the end of each term.

DISCIPLINE.

By reason of its isolated location the College is able to exercise effective oversight over the student body. The authorities do not undertake to restrain the liberty of the student more than is necessary for the securing of good results in scholarship and conduct. Each student is expected at all times to conduct himself as a gentleman, and to attend promptly and faithfully to all his duties.

Students are not allowed to leave the College grounds, either to visit neighboring towns, or their homes, without first securing a furlough from the Commandant of Cadets or from the President.

When a student overstays a furlough which extends through the Christmas holidays or the summer vacation, his name will be dropped from the rolls.

The College encourages the attendance of young men who have a serious purpose and who wish to secure a thorough technological training. The Faculty will do everything in its power to assist every cadet in securing a sound education and in forming correct habits, but will not tolerate the presence of young men who evince a determination not to study and not to comply with reasonable regulations.

For improper conduct or failure to keep up with his studies, a student may at any time be required to withdraw from College.

In order to keep parents systematically informed concerning the progress of their sons, reports, showing class standing and record of conduct, are sent out from the Dean's office at the end of each term.

LOCATION.

The College is situated at College Station, in the county of Brazos, and is 350 feet above sea level. The Houston & Texas Central and the International & Great Northern Railroads run through the grounds, daily trains stopping at the stations, about 650 yards from the main building. Students and visitors are advised to take trains arriving in the daytime.

POSTOFFICE.

College Station is a money order postoffice. Letters intended for persons at the College should not be directed to Bryan. At College Station there are telegraph and express offices.

HEALTH.

The buildings of the College are situated on the crest of a wide divide, with sufficient slope in every direction to insure proper drainage. The health of the student body, as shown by the daily records of the institution, is all that could be expected at any location in the State.

The work of sanitation is carried on throughout the entire year, with especial reference to the eradication of mosquitoes, flies and other disease-bearing agencies.

Drinking water is supplied by wells varying in depth from 300 feet to 1300 feet.

The barracks are inspected daily, and are kept neat and clean throughout. The rooms are well lighted and comfortable.

Drill, shop and field practice, work and outdoor athletic sports furnish sufficient and varied exercise and contribute very much to the maintenance of health and proper physical development.

There is no endemic disease at the College; most of the sickness is the result of indiscretion on the part of the student, or is due to the introduction of some mild epidemic disease, such as measles or mumps.

HOSPITAL.

The hospital is a two-story frame structure. There are three wards with bath, toilet rooms, etc., capable of accommodating about twenty-five patients, with several small rooms for the isolation of patients suffering from any common epidemic disease, such as mumps or measles. The sick in the hospital are carefully looked after by competent trained nurses under the direction of the College Surgeon. The diet of sick students is a matter of no little concern, and great care is taken to supply such nourishment as is best adapted to the condition of each patient. Convalescent patients after leaving the hospital are given orders by the surgeon for special diet at the mess hall for such time as is found necessary.

INFORMATION CONCERNING ADMISSION.

BEGINNING OF THE SESSION.

The thirty-eighth annual session will open Tuesday, September 23, 1913, and will close Tuesday, June 9, 1914.

Intending students should write to Charles E. Friley, Registrar, for application blanks.

REQUIREMENTS FOR ADMISSION.

To enter the College the applicant must be at least sixteen years old and physically able to perform the duties of a cadet. He must present a satisfactory certificate of good moral character from his last instructor. If he comes from another college he must present a certificate showing that he was in good standing when he left it. He must be free from contagious or infectious disease.

VACCINATION.

Each applicant for admission must present a certificate signed by a physician in one of the forms given below, that he has had smallpox or has been successfully vaccinated:

1. ...., Texas, ... 191.....
This is to certify that...................... has had smallpox.
(Signed.) ....M. D.

2. ...., Texas, ... 191.....
This is to certify that........................has been successfully vaccinated at two different times, the dates being...............
....
(Signed.) ....M. D.

3. ...., Texas, ... 191.....
This is to certify that...................... has been successfully vaccinated within the last five years.
(Signed.) ....M. D.

4. ...., Texas, ...191.....
This is to certify that I have today vaccinated.......................
(Signed.) ....M. D.

Candidates who have complied with the above requirements may be admitted to the Freshman class in one of three ways: (a) by examination, (b) on diploma from an affiliated school, (c) on special approval.

A. ADMISSION BY EXAMINATION.

Candidates for admission to the Freshman class will be examined in the subjects mentioned below. The treatment given in the text-books indicated will suffice for the purpose of these examinations.

1. Algebra through quadratics, including the fundamental operations, factoring, highest common factor, lowest common multiple, fractions, equations of the first degree with one or more unknown quantities, involution, evolution, theory of exponents, radicals, equations containing radicals, quadratics in one unknown quantity. Complete Secondary Algebra, *Fisher & Schwatt.*

2. Plane Geometry.

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces.

Plane Geometry. *Wentworth-Smith.* (Not required for admission to the School of Agriculture.)

3. Advanced English Grammar and Composition. *Maxwell.*

4. History of the United States. *Cooper, Estill and Lemon.*

5. Ancient History, as treated in *Myers'* General History.

Specimen entrance examination questions may be found in the appendix.

SCHEDULE OF ENTRANCE EXAMINATIONS.

FOR ADMISSION TO THE FRESHMAN CLASS.

Wednesday, September 24.

Algebra, 8 a. m. English, 2 p. m.

Thursday, September 25.

Geometry, 8 a. m. History, 2 p. m.

FOR ADMISSION TO THE TWO-YEAR COURSE.

Wednesday, September 24.

Algebra, 8 a. m. English, 2 p. m.

B. ADMISSION ON DIPLOMA.

Graduates of affiliated schools are admitted to the Freshman class at the beginning of the session without examination. For list of affiliated schools, see page ...

C. ADMISSION ON SPECIAL APPROVAL.

Young men over eighteen years of age, on presentation of certificates from their last instructors that they have satisfactorily completed the required subjects, may, with the consent of the Dean and professors concerned, be admitted without examination. Such certificates should state how far the several subjects were pursued and what text-books were used.

ADVANCED STANDING.

Applicants for advanced standing and those who come after the time set for the entrance examinations will be examined also upon the work already gone over by the class they propose they enter.

CLASSIFICATION OF STUDENTS.

CANDIDATES FOR DEGREES.

Candidates for degrees are assigned to one of the four classes—Freshman, Sophomore, Junior, Senior, according to prescribed rules. They are further classed as regular or irregular. A regular student is one who takes the work of one of the sections into which the several classes are divided, according to the schedule of that section.

An irregular student is one whose work does not conform to that of any given section. The irregularity may be due to deficiencies, extra work, or other reasons.

Students in the two-year courses are classified in a similar way.

SPECIAL STUDENTS.

Young men over 21 years of age, not candidates for a degree, may upon written application, approved by the Dean, be classed as special students. Young men between the ages of 18 and 21, desiring to be classed as special students must have the written consent of parent or guardian and the approval of the Dean. A special student must take work for which he is qualified, amounting to at least 18 hours a week. In order to be admitted to the work of any department he must have the consent of the head of the department; and his course as a whole is subject to the approval of the Dean.

A special student who may desire to become a candidate for a degree must comply with the requirements for admission to one of the classes of the four-year course and must have the consent of the Dean.

ADVISERS FOR FIRST-YEAR STUDENTS.

Each student on entering College will be assigned to a member of the teaching staff, who will act as his adviser and give him helpful counsel in matters pertaining to his work or to any feature of his college life.

REGISTRATION.

Upon arrival at the College, young men intending to enter will report at once to the Commandant for assignment to company and quarters, and for full information in regard to registration.

Tuesday, September 23, will be devoted to the registration of new students; Thursday, September 25, to the registration of old students. Recitations will begin Friday, September 26.

REGISTRATION FEE.

Every student is required to register when he first enters College and thereafter at the beginning of each term.

Upon registering for the first time he is charged a registration fee of three dollars. He pays this fee only once unless his connection with the College should later be severed; in that case he must pay the registration fee again in order to re-enter.

LATE REGISTRATION.

All students, except those registering for the first time, who do not complete their registration on the days set for that purpose, will be charged a fee of three dollars for late registration.

In the case of irregular and special students, registration is not complete until their assignment cards are returned, properly signed, to the Registrar.

EXPENSES FOR THE SESSION.

The fixed charges are:

Trust fund, payable on entrance	$ 5 00	
Incidental fee, payable on entrance	5 00	
Medical fee, payable on entrance	8 00	
Maintenance, First Term, payable on entrance	80 00	
Maintenance, Second Term, payable February 5	80 00	
		$178 00

Other necessary expenses are:

Uniform, payable on entrance, about	$30 00	
Books, from $15 to	20 00	
Laboratory fees, from $1.00 to	5 00	
		$ 55 00
Total		$233 00
For Freshmen in the engineering courses, drawing instruments, about		$ 10 00

Payment should be made by bank exchange, money order, or in cash. Personal checks will not be accepted.

The trust fund is to pay for property damaged or destroyed, and will be returned to the parent if there is no charge of this kind against the student.

The incidental fee is used for sundry incidental expenses, such as ice water, printed forms, examination books, etc.

The medical fee covers the professional services of the College Surgeon and of the hospital staff.

Incidental and medical fees will in no case be refunded.

Maintenance includes board, fuel, washing, lights, room rent, single bedsteads, mattresses, tables, washstands, chairs.

Each student is required to keep on hand a supply of bed clothing for single beds, towels, etc. For winter he should provide himself with an overcoat and a mackintosh.

Students are required to take their meals at the Mess Hall.

Payment for each term must be made in advance. A student entering during a term will be charged maintenance for the remainder of that term only.

A student once entering for a term, and having paid for that term, or the balance of it, forfeits all claim to said payment in case of voluntary withdrawal from the College before the expiration of said term, except in case of sickness disqualifying him for the discharge of his duties for the rest of the term. When such sickness takes place at the

College, it must be attested by the College Surgeon before the student can receive the balance of his maintenance fund.

The expenses of a graduate student are $5.00 for material used in laboratories and practical work, and $8.00 for medical fee, with charge for maintenance as above.

Day students pay $18, and trust fund, incidental fee, and medical fee, as above.

UNIFORM.

Every cadet must keep on hand in good condition: 1 regulation blouse, 2 pairs regulation gray trousers, 1 pair regulation white trousers, 1 regulation cap, 1 regulation hat, 6 regulation shirts, 6 standing white collars, 6 turned down white collars, 1 pair black shoes, 4 pairs white gloves, 1 regulation tie, 1 regulation belt, and an ample supply of underwear.

In addition, each student must have, for shop and field practice, a working suit of drilling, which costs from $1.50 to $2.50.

The blouses, trousers, caps and hats are made by contract, and students are required to purchase from the contractors, in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons, and may secure the best material for the lowest price. All parts of the equipment are carefully inspected by the Commandant of Cadets, in order that good fits and satisfactory materials may be secured.

By means of the contract system not only is there a saving effected, but there is also furnished a guarantee that the material will be of the requisite pattern and quality. For the efficient enforcement of the arrangements entered into, the College authorities require that each student make his purchases through the machinery provided at the College, and that a deposit sufficient to cover the purchase price of the equipment be placed in the hands of the Treasurer when the cadet matriculates. No suit will be ordered until such deposit has been made.

The other regulation articles may be purchased at the exchange store mentioned below.

It should be distinctly realized that this clothing is not an additional expense, but that it is the cheapest clothing that cadets can wear. It is very neat in appearance, and is serviceable and durable.

CADET EXCHANGE.—BOOKS AND OTHER SUPPLIES.

The College runs an exchange store for the purpose of supplying necessary articles to students at the lowest possible cost. The store carries in stock, books, stationery, drawing instruments, regulation articles of the uniform, toilet articles, etc. These goods are sold at prices just sufficient to cover cost and operating expenses.

Text-books cost from $15 to $20 a year; drawing instruments for Freshmen in the Engineering courses about $10. Laboratory fees are from $2.00 to $5.00.

STUDENT LABOR.

The Legislature has provided a fund by which a limited number of industrious young men may defray a part of their expenses by working for the College at such times as their regular duties will permit.

The rate of pay is made to depend upon the character of the work, and the manner in which it is performed. A student should not count upon earning more than $40 a session.

EXPULSIONS.

At a joint session of the Board of Regents of the University of Texas and the Board of Directors of the Agricultural and Mechanical College, held at College Station, Texas, from June 30 to July 1, 1896, the following order was made:

"It is ordered, that hereafter, when any student shall be dismissed or expelled from either of the branches of the University of Texas on account of any immoral or other conduct which shall render him an unfit character to be matriculated in any of such branches, it shall thereupon be the duty of the branch so expelling or dismissing such student to immediately notify the other branches of their action, whereupon such other branches shall refuse to receive such student for matriculation, or even for examination, should he apply therefor, until the branch which has so expelled or dismissed him has rescinded or reconsidered its former action, and recommended such student for admission into such other branch at which he may apply."

COURSES OF STUDY.

There are eight regular courses, extending through four years, and leading to the degree of Bachelor of Science, the particular course pursued being specified in the diploma.

I. Course in Agriculture.

III. Course in Mechanical Engineering.

IV. Course in Civil Engineering.

V. Course in Electrical Engineering.

VI. Course in Textile Engineering.

VII. Course in Architectural Engineering.

VIII. Course in Chemical Engineering.

IX. Course in Architecture.

In addition the following courses are offered:

(a) A graduate course in Agriculture, leading to the degree of Master of Science in Agriculture.

(b) Graduate courses leading to the degree of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, Textile Engineer.

(c) A two-year course in Agriculture.

(d) A two-year course in Textile Engineering.

Note.—In addition to the work in the curricula of the several courses, students taking English are required to attend conferences with their instructors as stated in the description of the courses in English; and all undergraduates have military drill. See Course 3, Military Science, page 145.

The School of Agriculture

FACULTY OF THE SCHOOL OF AGRICULTURE.

R. T. MILNER,
President.

E. J. KYLE, M. S. A.,
Dean.

CHARLES PURYEAR, M. A., C. E.,
Dean of the College and Professor of Mathematics.

M. FRANCIS, D. V. M.,
Professor of Veterinary Science.

E. J. KYLE, M. S. A.,
Professor of Horticulture.

C. P. FOUNTAIN, A. M.,
Professor of English.

O. M. BALL, M. A., Ph. D.,
Professor of Biology.

J. C. BLAKE, Ph. D.,
Professor of Chemistry and Chemical Engineering.

O. F. CHASTAIN,
Professor of History.

WILMON NEWELL, M. S.,
Professor of Entomology.

J. OSCAR MORGAN, M. S. A., Ph. D.,
Professor of Agronomy.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

J. W. KIDD, E. E.,
Professor of Physics.

LEVI G. BROWN, First Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics and Commandant of Cadets.

J. W. RIDGWAY, M. S.,
Acting Professor of Dairy Husbandry.

W. T. WRIGHT, A. B.,
Acting Professor of Physics.

R. P. MARSTELLER, D. V. M.,
Associate Professor of Veterinary Science.

C. C. HEDGES, A. B., Ph. D.,
Associate Professor of Agricultural Chemistry.

C. M. EVANS, M. S.,
Superintendent of Extension.

PEYTON IRVING, Jr.,
Visitor of Schools.

COURSES IN THE SCHOOL OF AGRICULTURE.

In the School of Agriculture there is offered a four-year course in agriculture leading to the degree of Bachelor of Science.

It is the object of this course to give young men a thoroughly practical and scientific training in those branches of science which relate to agronomy, animal husbandry, dairy husbandry and horticulture. It is also intended that the student's general training shall not be neglected, and to this end he is given instruction in the English language, history and mathematics, in addition to the special instruction in the sciences of chemistry, physics, botany and animal anatomy and physiology.

The twenty-four hundred acres in the farm, one hundred and twenty milch cows (Jersey, Holstein and grades) hogs, work stock, tools and machinery, silos, etc., furnish illustrations of practical value to the student. The dairy is fitted with milk separators, churns, butter-workers and milk-testing machines.

The location of the Texas Agricultural Experiment Station at the College makes it possible to give students the benefit of experiments conducted at the College, and the Experiment Station library forms a valuable adjunct to the regular College library by furnishing the results of valuable tests made along agricultural lines in other States. The library also receives the leading agricultural periodicals, which are available to students.

The studies in the course in Agriculture are divided into four groups; Group A gives prominence to work in soils, farm management, machinery, crops; Group B, to work in horticultural subjects; Group C, to work pertaining to live stock interests; Group D, to dairy farming and creamery management.

The choice of the four groups must be made at the beginning of the Junior year. In the Senior year options are offered as shown in the curricula following. Option 4 is announced subject to the appointment of a Professor of Agricultural Education. The elective subject in each option must be selected under the direction of the head of the department in which the option is taken, and registered with the Dean of the College.

In the School of Agriculture is also offered a two-year course, leading to a certificate, and a graduate course, leading to the degree of Master of Science (in Agriculture).

I.—COURSE IN AGRICULTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Biology 1 Zoology.	3	Biology 1 Zoology.	3
English 1 Rhetoric and Composition	3	English 1 Rhetoric and Composition.	3
History 1 English.	3	History 1 English.	3
Mathematics 11 Plane Geometry,	3	Mathematics 11 Plane Geometry.	3
Physics 1 General.	3	Physics 1 General.	3
		Dairy Husbandry 1 Milk Testing.	2
	15		17

Agronomy 1	2	*Animal Husbandry* 2	4
Animal Husbandry 1	4	*Dairy Husbandry* 1	2
Biology 1	2	*Biology* 1	2
Drawing 3	2	*Drawing* 31	2
Mechanical Engineering 13*a*	4	*Physics* 1	2
Physics 1	2		
	16		12

SOPHOMORE YEAR.

Agronomy 2a Soils.	2	Agronomy 2a Soils.	2
Biology 2 Botany.	3	Biology 2 Botany.	2
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
English 2 Literature.	2	English 2 Literature.	2
Horticulture 1a Plant Propagation.	2	Horticulture 2 Vegetable Gardening.	3
Military Science 1	1	Military Science 1	1
Physics 2 General.	2	Animal Husbandry 4 Poultry.	1
Veterinary Science 1 Anatomy and Physiology.	2	Animal Husbandry 3 Judging Breeding Types.	2
	17		16

Agronomy 2*a*	2	*Agronomy* 2*a*	2
Biology 2	2	*Biology* 2	2
Chemistry 1*a*	2	*Chemistry* 1*a*	2
Horticulture 1*a*	2	*Horticulture* 2	2
Physics 2	2	*Animal Husbandry* 3	4
Veterinary Science 1	2	*Animal Husbandry* 4	2
	12		14

GROUP A.—AGRONOMY.

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3 Farm Crops.	3	Agronomy 3 Farm Crops.	3
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
English 4 Advanced Composition.	3	English 4 Advanced Composition.	3
Entomology 1 Systematic.	2	Entomology 2 Economic.	2
Veterinary Science 2 Pharmacology.	2	Veterinary Science 3 Non-infectious Diseases.	2
Biology 3 Rural Hygiene.	3	Civil Engineering 2 Surveying, Leveling.	3
or Agronomy 4 Irrigation.		*or* Biology 3 Rural Hygiene.	
or Chemistry 4 Organic.	2	*or* Chemistry 4 Organic.	2
	16 *or* 15		17

Agronomy 3	2	*Agronomy* 3	2
Entomology 1	2	*Entomology* 2	2
Chemistry 3	4	*Chemistry* 3	2
Veterinary Science 2	2	*Veterinary Science* 3	2
Agronomy 4 *or*		*Civil Engineering* 2 *or*	4
Biology 3 *or*		*Chemistry* 4 *or*	
or Chemistry 4	2	*Biology* 3	2
	14 *or* 12		12

SENIOR YEAR.

Required.

Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	2
Economics 3 Economic Organization.	3	Economics 3 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Military Science 2	1	Textile Engineering 5 Cotton Classing.	1
	8		8
Agronomy 6	2	*Agronomy* 6	2

Option 1.—Argonomy.

Agronomy 5 Adv. Soils.	2	Agronomy 8 Plant Breeding.	2
Agronomy 7 Farm Powers.	2	Agronomy 9 Farm Machinery.	2
Agronomy 8 Plant Breeding.	2	Agronomy 10 Crop Ecology.	2
Biology 4 Plant Diseases.	3	Biology 4 Plant Diseases.	3
	9		9

OPTION 1.—Agronomy.—Continued.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 5	2	*Agronomy* 8	2
Agronomy 7	2	*Agronomy* 9	2
Agronomy 8	2	*Agronomy* 10	2
Biology 4	2	*Biology* 4	2
	8		8

Option 2.—Agricultural Chemistry.

Chemistry 6 Advanced Agr. Analysis.	2	Chemistry 6 Advanced Agr. Analysis.	2
Chemistry 7 Physical Chemistry.	2	Chemistry 8 Advanced Agricultural.	2
Elective	3	Elective	3
	7		7
Chemistry 6	6	*Chemistry* 6	6
Chemistry 7	4	*Chemistry* 8	4
Elective	2	*Elective*	2
	12		12

Option 3.—Agricultural Botany.

Biology 5 Plant Physiology.	2	Biology 5 Plant Physiology.	2
Biology 6 Bacteriology.	2	Biology 6 Bacteriology.	2
Elective	3	Elective	3
	7		7
Biology 5	4	*Biology* 5	4
Biology 6	6	*Biology* 6	6
Elective	2	*Elective*	2
	12		12

Option 4.—Agricultural Education.

Education	6	Education	6
Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Elective	2	Elective	2
	11		11
Agronomy 6	2	*Agronomy* 6	2
Elective	2	*Elective*	2
	4		4

GROUP B.—HORTICULTURE.

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 4 Advanced Composition.	3	English 4 Advanced Composition.	3
Entomology 1 Systematic.	2	Entomology 2 Economic.	2
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
Horticulture 3 Tree and Vine Fruits.	3	Horticulture 4 Plant Breeding.	2
Veterinary Science 2 Pharmacology.	2	Horticulture 5 Spraying.	1
or Agronomy 3 Farm Crops.	3	Horticulture 6 Nut Culture.	2
Biology 3 Rural Hygiene.	3	Civil Engineering 2 Surveying, Leveling.	3
or Agronomy 4 Irrigation.		*or* Biology 3 Rural Hygiene.	
or Chemistry 4 Organic.	2	*or* Chemistry 4 Organic.	2
	17, 16 *or* 15		18 *or* 17
Chemistry 3	4	*Chemistry* 3	2
Entomology 1	2	*Entomology* 2	2
Horticulture 3	2	*Horticulture* 4	2
Veterinary Science 2 *or*		*Civil Engineering* 2 *or*	4
Agronomy 3	2	*Chemistry* 4 *or*	
Biology 3 *or*		*Biology* 3	2
Agronomy 4 *or*		*Horticulture* 5	2
or Chemistry 4	2		
	14 *or* 12		12

SENIOR YEAR.

Required.

Economics 3 Economic Organization.	3	Economics 3 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Horticulture 7 Pomolgy.	3	Horticulture 9 Experimental.	2
Military Science 2	1	Textile Engineering 5 Cotton Classing.	1
	8		7
Horticulture 7	2	*Horticulture* 9	2

Option 1.—Horticulture.

Biology 4 Plant Diseases.	3	Biology 4 Plant Diseases.	3
Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Entomology 3 Fruit Insects.	2	Horticulture 10 Citrus Fruits.	2
Horticulture 8 Forestry.	2	Horticulture 11 Floriculture, Landscape Gardening.	2
	10		10

Option 1.—Horticulture.—Continued.

First Term.	Hours per week.	Second Term	Hours per week
Agronomy 6	2	*Agronomy* 6	2
Biology 4	2	*Biology* 4	2
Entomology 3	2	*Horticulture* 10	2
Horticulture 8	2	*Horticulture* 11	2
	8		8

Option 2.—Agricultural Chemistry.

Chemistry 6 Advanced Agr. Analysis.	2	Chemistry 6 Advanced Agr. Analysis.	2
Chemistry 7 Physical Chemistry.	2	Chemistry 8 Advanced Agricultural.	2
Elective	3	Elective	3
	7		7

Chemistry 6	6	*Chemistry* 6	6
Chemistry 6	4	*Chemistry* 8	4
Elective	2	*Elective*	2
	12		12

Option 3.—Agricultural Botany.

Biology 5 Plant Physiology.	2	Biology 5 Plant Physiology.	2
Biology 6 Bacteriology.	2	Biology 6 Bacteriology.	2
Elective	3	Elective	3
	7		7

Biology 5	4	*Biology* 5	4
Biology 6	6	*Biology* 6	6
Elective	2	*Elective*	2
	12		12

Option 4.—Agricultural Education.

Education	6	Education	6
Horticulture 7 Pomology.	3	Horticulture 9 Experimental.	3
Elective	2	Elective	2
	11		11

Horticulture 7	2	*Horticulture* 9	2
Elective	2	*Elective*	2
	4		4

GROUP C.—ANIMAL HUSBANDRY.

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3 Farm Crops.	3	Agronomy 3 Farm Crops.	3
Animal Husbandry 5 Breeding.	2	Animal Husbandry 5 Breeding.	2
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
English 4 Advanced Composition.	3	English 4 Advanced Composition.	3
Veterinary Science 2 Pharmacology.	2	Veterinary Science 3 Non-infectious Diseases.	2
		Veterinary Science 4 Obstetrics.	2
Entomology 1 Systematic. *or* Chemistry 4 Organic. *or* Biology 3 Rural Hygiene.	2	Entomology 2 Economic. *or* Chemistry 4 Organic. *or* Biology 3 Rural Hygiene.	2
	15		17
Agronomy 3	2	*Agronomy* 3	2
Animal Husbandry 5	2	*Animal Husbandry* 5	2
Chemistry 3	4	*Chemistry* 3	2
Veterinary Science 2	2	*Veterinary Science* 3	2
		Veterinary Science 4	2
Chemistry 4 *or* *Entomology* 1 *or* *Biology* 3	2	*Chemistry* 4 *or* *Entomology* 2 *or* *Biology* 3	2
	12		12

SENIOR YEAR.

Required.*

First Term.	Hours per week.	Second Term.	Hours per week.
Animal Husbandry 7 Feeding.	3	Animal Husbandry 7 Feeding.	3
Economics 3 Economic Organization.	3	Economics 3 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Military Science 2	1	Veterinary Science 5 Infectious Diseases.	2
	8		9
Animal Husbandry 7	2	*Animal Husbandry* 7	2

Option 1.—Animal Husbandry.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Agronomy 7 Farm Powers.	2	Agronomy 9 Farm Machinery.	2
Animal Husbandry 8 Advanced Judging.	1	Animal Husbandry 9 Live Stock Management.	2
Elective	2	Elective	2
	8		9

*In addition to the required subjects the students may take Textile Engineering. 5 (Cotton Classing), 1 hour a week in the Second Term.

Option 1.—Animal Husbandry—Continued.

First Term.	Hours per week.		Hour per week.
Agronomy 6	2	*Agronomy* 6	2
Agronomy 7	2	*Agronomy* 9	2
Animal Husbandry 8	4	*Animal Husbandry* 9	2
Elective	2	*Elective*	2
	8		8

Option 2.—Agricultural Chemistry.

Chemistry 6 Advanced Agr. Analysis.	2	Chemistry 6 Advanced Agr. Analysis.	2
Chemistry 7 Physical Chemistry.	2	Chemistry 8 Advanced Agricultural.	2
Elective	3	Elective	3
	7		7

Chemistry 6	6	*Chemistry* 6	6
Chemistry 7	4	*Chemistry* 8	4
Elective	2	*Elective*	2
	12		12

Option 3.—Veterinary Science.

Veterinary Science 6 Anatomy.	3	Veterinary Science 6 Anatomy.	3
Veterinary Science 7 Adv. Lab. Methods.	3	Veterinary Science Adv. Lab. Methods.	3
Elective	3	Elective	3
	9		9

Veterinary Science 6	6	*Veterinary Science* 6	6
Elective	4	*Elective*	4
	10		10

Option 4.—Agricultural Education.

Education	6	Education	6
Animal Husbandry 7 Feeding.	3	Animal Husbandry 7 Feeding.	3
Elective	2	Elective	2
	11		11

Animal Husbandry 7	2	*Animal Husbandry* 7	2
Elective	2	*Elective*	2
	4		4

GROUP D.—DAIRY HUSBANDRY.

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3 Farm Crops.	3	Agronomy 3 Farm Crops.	3
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
Chemistry 4 Organic.	2	Chemistry 4 Organic.	2
English 4 Advanced Composition.	3	English 4 Advanced Composition.	3
Dairy Husbandry 2 Dairy Machinery.	3	Dairy Husbandry 3 Butter Making.	2
Veterinary Science 2 Pharmacology.	2	Veterinary Science 3 Non-infectious Diseases.	2
		Veterinary Science 4 Obstetrics.	2
	16		17
Agronomy 3	2	*Agronomy* 3	2
Chemistry 3	4	*Chemistry* 3	2
Chemistry 4	2	*Chemistry* 4	2
Dairy Husbandry 2	4	*Dairy Husbandry* 3	2
Veterinary Science 2	2	*Veterinary Science* 3	2
		Veterinary Science 4	2
	14		12

SENIOR YEAR.

Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Animal Husbandry 6 Breeding and Feeding.	3	Chemistry 9 Dairy.	2
Biology 7 Dairy Bacteriology.	2	Biology 7 Dairy Bacteriology.	2
Dairy Husbandry 4 Creamery Management.	3	Dairy Husbandry 5 Ice Cream Making.	3
Economics 3 Economic Organization.	3	Economics 3 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Military Science 2	1	Veterinary Science 5 Infectious Diseases.	2
	16		16
Agronomy 6	2	*Agronomy* 6	2
Animal Husbandry 6	2	*Chemistry* 9	6
Biology 7	4	*Biology* 7	4
Dairy Husbandry 4	2	*Dairy Husbandry* 5	2
	10		14

GRADUATE COURSE IN AGRICULTURE.

Graduate studies in the Agricultural Course lead to the degree of Master of Science (in Agriculture). It is required for admission to this course that the candidate be a graduate of this College, or of some other institution approved by the Faculty.

The candidate must register with the Dean of the College, and must take the equivalent of 12 hours theory and 18 hours practice a week for one year in two or three of the following departments: Agronomy, Animal Husbandry, Biology, Chemistry, Entomology, Horticulture, Veterinary Science; this course of study to be approved by a committee consisting of the Dean of the College and the heads of departments concerned. Unless he has credit in organic chemistry, he must take it as a part of this course.

He must present as a part of this work a thesis satisfactory to the committee. The thesis must be typewritten on paper 8½x11 inches.

In addition to the fees regularly charged, he must pay to the Treasurer a fee of two dollars to cover the cost of binding his thesis.

TWO-YEAR COURSE IN AGRICULTURE.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year course in Agriculture, the candidate must be at least sixteen years of age and must be able to pass entrance examinations in English grammar and composition and in algebra to simultaneous equations of the first degree, or must present satisfactory certificate of proficiency in these subjects.

PLAN OF COURSE.

The two-year course in Agriculture is intended for young men who wish to spend one or two years in preparing to go back to the farm and apply successfully all the more important scientific methods of farming which have been worked out in recent years. To this end the course is made highly practical and technical, including in abbreviated form most of the technical work required in the four-year course. Students who have satisfactorily completed the work of this course and have had approved farm experience will be given a certificate showing the work done.

TWO-YEAR COURSE IN AGRICULTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 15 Soils.	3	Agronomy 16 Crop Production.	3
Biology 15 Zoology.	3	Biology 16 Botany.	3
English 9 Grammar, Composition.	3	English 9 Grammar, Composition.	3
Horticulture 15 Plant Culture and Propagation.	3	Horticulture 2 Vegetable Gardening.	3
		Animal Husbandry 16 Judging Breed Types.	2
	12		14
Agronomy 15	2	*Agronomy* 16	4
Agronomy 16	2	*Animal Husbandry* 16	2
Animal Husbandry 15	6	*Biology* 16	2
Biology 15	2	*Horticulture* 2	2
Horticulture 15	2	*Dairy Husbandry* 1*a*	4
Textile Engineering 17	2		
	16		14

SECOND YEAR.

Agronomy 17 Agricultural Engineering.	2	Agronomy 18 Farm Eqpt. and Management.	3
Chemistry 20 Practical.	3	Animal Husbandry 17 Breeding.	1
Dairy Husbandry 16 Farm Dairying.	3	Animal Husbandry 18 Feeding.	2
English 10 Composition.	3	Chemistry 20 Practical.	3
Horticulture 3 Tree and Vine Fruits.	3	English 10 Composition.	3
		Entomology 10 Economic.	2
		Veterinary Science 16 Animal Diseases.	3
	14		17
Agronomy 17	4	*Agronomy* 18	2
Chemistry 20	2	*Animal Husbandry* 17	2
Dairy Husbandry 16	4	*Animal Husbandry* 18	2
Horticulture 3	2	*Chemistry* 20	2
		Entomology 10	2
		Veterinary Science 16	2
	12		12

DEPARTMENT OF AGRONOMY.

PROFESSOR MORGAN, ASSISTANT PROFESSOR S. A. MCMILLAN, MR. WOOD, MR. COEN.

Agronomy comprises the theory and practice of the production of field crops. In this department instruction is given in those subjects which relate especially to the field and its affairs, such as soils, farm crops, seed selection, farm management, plant breeding, irrigation and drainage, farm powers, farm motors, farm machinery, crop ecology, etc.

These subjects are presented by means of lectures, recitations, laboratory exercises, collateral readings, farm excursions, etc. To the equipment and facilities which the department possesses for giving this instruction, is also added the opportunity for contact with the research work of the Experiment Station, especially along the lines of soil fertility and crop production.

The present day farmer must have a knowledge of the fundamental principles underlying soil management and crop production, regardless of the system of farming to be followed, as these are basic. To produce maximum crops and at the same time keep the soil permanently productive, requires both theoretical and practical knowledge. It is the purpose of this department to train the student along both of these lines.

The courses are as follows:

1. Seed Selection. Freshman. First term, 2 hours a week. Practice.

This course gives the student a practical knowledge of the best methods of seed selection with reference to all important field crops. Emphasis is placed upon the importance of field selection as a basis of plant improvement. The student is familiarized with the points that go to constitute an ideal seed plant The seed itself is also studied and practice work in judging and scoring grain is given.

No text. (Required in Course I.)

2a. Soils. Sophomore. First and second terms, 2 hours a week, with practice

This course gives the student a rather comprehensive knowledge of the soil and its management. It is given according to the following outline:

(a) The soil as a medium for Root Development, including a study of rock and its products, the soil mass, together with the physical properties of the soil and their modification; the organic contents of the soil.

(b) The soil as a Reservoir for water, including the functions of water in plant growth; the amount of water in the soil; the movement of soil water, and the control of soil water.

(c) Plant Nutrients in the soil, including a careful study of both micro-organisms and macro-organisms, as they influence soil productiveness.

(e) The Soil Air; composition and functions of.

(f) Heat of the Soil: comprising a study of the sources, functions and means of modifying soil temperature.

(g) External factors in soil management; tillage, crop adaptation, etc.

Text: Soils, *Lyon & Fippin.*

Practice, 2 hours a week.

The student, working in the laboratory, applies the principles learned in the class room, to the actual management of soils.

(Required in Course I.)

3. Farm Crops. Junior. First and second terms, 3 hours a week; with practice.

In this course, all the leading field crops are studied with regard to structure, composition, races and varieties, breeding, or improvement, soils, rotations, and fertilizers, together with tillage operations, harvesting and marketing.

Texts: Southern Field Crops, *Duggar,*
Forage and Fibre Crops, *Hunt.*

Practice, 2 hours a week.

In the laboratory the student makes a careful study of the leading characteristics of the different crops; seeds are studied as regards purity, and other points that determine value.

(Required in Groups A, C, D.)

4. Irrigation and Drainage. Junior. Second term, 2 hours a week; with practice.

The water requirements of the common crops, duty of water and factors modifying same, the different methods of applying water to land, irrigation reservoirs and ditches, the alkali problem and its control, a brief survey of the water supply of Texas and the principles of economic conservation, and state and national water-right regulations will be studied. Drainage will be studied from the viewpoint of soil physics and soil moisture control. The movement of ground water, tile and open drains will be treated in detail.

Lectures, recitations and individual reports.

(Optional in Groups A, B.)

Texts: Irrigation, *Wilcox.*
Engineering for Land Drainage, *Elliott,*
Station and Government Bulletins and Reports.

Practice, 2 hours a week. Ditch and dam site surveys, land leveling and the laying of tile drains.

5. Advanced Soils. Senior. First term, 2 hours a week ;with practice.

This course is intended for the student who wishes to make a specialty of soil study. It deals especially with systems of soil management with reference to permanent soil productiveness. Recent literature bearing on the subject is discussed and the results of some of the leading soil investigations studied.

Text: Soil Fertility and Permanent Agriculture, *Hopkins.*

Practice, 2 hours a week.

Laboratory studies of soil with special reference to the fertility problem.

(Option 1, Groups A, B.)

6. Farm Management. Senior. First and second terms, 3 hours a week. with practice.

The application of all the principles taught in the various agricultural subjects to the business management of the farm. Farm problems and farm bookkeeping are featured. Different systems of farming are studied as regards the equipment in land, labor, and capital for each, also crop rotations best suited to the different systems.

Practice. 2 hours a week.

Practice work comprises a field study of available farms, planning and outlining systems of management best adapted to each. Attention is given to the general lay-out of farm, size and shape of fields, condition of buildings, ditches, roadways, etc., and the necessary improvements are suggested.

(Required in Groups A, D; option 1, Group C.)

7. Farm Powers. Senior. First term, 2 hours a week; with practice.

A brief review of the principles of energy, work and power: the simple machines and elementary mechanics; animal power as a prime mover and its application to the operations of the farm; windmills; water wheels; steam engines and boilers, especially the portable types; fuels; gas engines; gas tractors and their use on a farm.

Texts: Farm Machinery and Farm Motors, *Davidson & Chase*.
The Gas Engine Handbook, *Roberts*.

Practice. 2 hours a week.

Laboratory and field studies in farm mechanics. Comparisons of the power required to operate the various farm implements; a study of the gas engine and its parts; the practical operation of gas engines and the more common difficulties encountered in their use will occupy a most important place in the practice.

(Option 1, Groups A, B, C.)

8. Plant Breeding. Senior. First and second terms, 2 hours a week; with practice.

A course dealing with the improvement of field crops. The methods of breeding applicable to each crop are discussed in detail. The relative merits of selecting fluctuating variations, selecting mutations, and the isolation of elementary species, are given special consideration.

Largely a lecture course.

Practice, 2 hours a week.

Students will study the different forms of variation in the field and laboratory and will have practice work in making selections relative to plant improvement.

(Option 1, Group A.)

9. Farm Machinery. Senior. Second term, 2 hours a week; with practice.

A history of development of agricultural machinery in America; detailed studies of the principal appliances used in the tillage, seeding, cultivation and harvesting of field crops; points to be observed in the selection of farm machinery for any given purpose, will be stressed in class.

Lectures, recitations and reports.

Text: Farm Machinery and Farm Motors, *Davidson & Chase.*

Practice. 2 hours a week.

As many of the types of machines studied in class as are available will be taken apart, reassembled and operated in the field. Calibration of planters and seeders will receive attention. A portion of the time will be devoted to the practical use of concrete for farm structures.

(Option 1, Groups A, C.)

10. Crop Ecology. Senior. Second term, 2 hours a week; with practice.

A course dealing with the effect of such climatic factors as temperature, rainfall, atmosphere, humidity, etc., upon the yield; and the physical and chemical development of our ordinary field crops.

Lectures and reference reading.

Practice, 2 hours a week.

Students will make a careful study of crops and grain grown under varying climatic conditions; familiarizing themselves with such modifications as have been produced as a result of the different conditions.

(Option 1, Group A.)

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

15. Soils and Soil Management. First term, 3 hours a week; with practice.

A study of the origin, composition, structure, texture and crop adaptations of agricultural soils. Soil fertility and its maintenance; manures, fertilizers, cover crops, fallowing, fall and spring plowing, crop rotations, diversification and the renovation of worn-out soils will receive attention in the proper order. This course is designed to meet the more practical needs of the two-year student.

Recitations and lectures.

Texts: Soils, *Fletcher.*
Farm Manures and Fertilizers, *Brooks.*

Practice, 2 hours a week.

Laboratory and field studies on the water-holding capacity of soils, capillarity, the influence of organic matter on the physical properties, and lime and its effects.

16. Crop Production. Second term, 3 hours a week; with practice.

Beginning with laboratory instruction on the use of the score card and the judging of corn and cotton, this course will include a thorough treatment of all the principal grain, forage and fibre crops grown on the farms of this State. The best methods for the planting, tilling, harvesting and storing of the crops will be taught. The principal diseases and insect enemies will receive careful attention.

Recitations and lectures.

Texts: Southern Field Crops, *Duggar.*
Forage and Fibre Crops, *Hunt.*

Practice, first term 2 hours; second term, 4 hours a week.

Laboratory and field practice in the selection of seed for the various crops studied; seed testing; plot studies of the plants of the field.

Second Year.

17. Agricultural Engineering. First term, 2 hours a week; with practice.

A general course in irrigation, drainage, farm powers, farm machinery and practical cement construction. The limited time allowed for this course will permit only an abbreviated treatment of each subject, but the fundamental principles and facts will be presented.

Practice, 4 hours a week.

Field work with level and rod; surveys of irrigation and drainage ditches; simple dams and reservoirs; the operating of gas engines; laboratory and field practice with tillage, seeding and harvesting implements; concrete and cement mixing; concrete posts, floors and tanks.

18. Farm Equipment and Management. Second term, 3 hours a week; with practice.

A comprehensive study of the farm from an economic and business standpoint. Such topics as the planning and organizing of the farm with respect to available resources; farm labor; wages; rents and lease systems; contracts; farm accounts; farm advertising and salesmanship; efficiency; and the principal rural problems will be studied.

Practice, 2 hours a week.

Students will be required to work out a problem consisting of the planning, equipping and managing of a given farm on an ideal plan for a period of several years. Excursions to representative farms, and agricultural surveys will be undertaken as opportunity may permit.

DEPARTMENT OF ANIMAL HUSBANDRY.

PROFESSOR BURNS, ASSISTANT PROFESSOR TEMPLETON, MR. KENNEDY, MR. BELL.

The courses in the Department of Animal Husbandry may be grouped under the four main heads:

(1) The Judging of Live Stock.
(2) The Breeding of Live Stock.
(3) The Feeding of Live Stock.
(4) The Management of Live Stock.

These are arranged to follow each other in proper order so that they may be best understood by the student, and most clearly taught by the instructor. Every effort is made to make every course in Animal Husbandry contribute to the better understanding of the others, and all unite in embracing the subject completely. Special efforts are made in every course to present the useful side, and also to devote as much time as possible to the practices. The courses are designed to give the student a thorough understanding of the live stock business in all its phases and to better fit him for work in this line, whether it be stock farming, ranching, teaching or investigation. Students intending to specialize in Animal Husbandry are required to take the studies under Group C.

The courses are as follows:

1. Judging Market Types of Cattle and Sheep. Freshman. First term, 4 hours a week. Practice.

The lectures are explanatory of the various classes and grades of cattle and sheep recognized in the leading stock markets. The points of these and their value to stockman, butcher and consumer are fully discussed. The practice embraces a thorough training in the scoring of fat cattle and fat sheep; supplemented by the study of dressed carcasses as far as possible. In this course lectures are also given on the type and function of the dairy cow and thorough training is given in the scoring of dairy cattle. Comparative judging constitutes an important part of the work.

Text: Judging Live Stock, *Craig*.

(Required in Course I.)

2. Judging Market Types of Horses and Swine. Freshman. Second term, 4 hours a week. Practice.

The classes and grades of horses and swine recognized in the leading markets are discussed fully. The distinction of classes, and their importance, is made clear by the further use of the score card. Comparative judging is also an important feature in this course.

(Required in Course I.)

3. Judging Breed Types of Horses, Cattle, Sheep and Swine. Sophomore. Second term, 2 hours a week; with practice.

The lectures in this course treat of the origin, history, characteristics and adaptability of the various breeds of live stock. As far as the equipment in live stock will permit, the student is shown by means of representative animals the best types of the breeds of horses, cattle, sheep and swine.

Text: Types and Breeds of Farm Animals, *Plumb.*

Practice, 4 hours a week.

The score cards of the different breed associations are used in determining the merits of the animals and these are further explained in the lectures. An important part of the practice consists of comparative judging similar to that of the show ring.

Prerequisite, *Animal Husbandry,* 1, 2.

(Required in Course I.)

4. Poultry Judging and Management. Sophomore. Second term, 1 hour week; with practice.

Lectures are given on the origin, history and classification of the various breeds of poultry. A thorough study is made of poultry feeding and breeding. Houses, yards, diseases, incubation, brooding and marketing of poultry products receive careful consideration. The interests of both the fancier and of the producer of market poultry are kept in mind.

Practice, 2 hours a week.

Instruction is given in scoring market types and breeds of poultry, and when the student has attained proficiency in this, comparative judging is introduced. Some practice periods are devoted to studying the anatomy of birds; and some to studying incubators and brooders.

(Required in Course I.)

5. The Breeding of Live Stock and the Study of Pedigrees. Junior. First and second terms, 2 hours a week; with practice.

The lectures of this course embrace a presentation of the principles and methods of breeding, involving a further study of the origin, history and characteristics of the breeds of live stock. Heredity and variation, and allied topics are included in the lectures on the principles, while the subjects of inbreeding, line breeding, and balanced breeding are among those relating to the methods of breeding. The practices of breeding live stock are treated fully, including the business of producing purebred stock, as well as those for the common market.

Text: Breeding Farm Animals, *Marshall.*

Practice, 2 hours a week.

During the practice periods the study of pedigrees is given especial attention. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite, *Animal Husbandry* 3.

(Required in Group C.)

6. The Breeding and the Feeding of Dairy Cattle. Senior. First term, 3 hours a week; with practice.

This course is designed especially for students specializing in Dairy Husbandry. The lectures on breeding treat of the principles and methods of breeding with special reference to dairy cattle. The business of breeding dairy cattle is fully discussed. The lectures on feeding cover the principles of animal nutrition and treat specifically the feeding of dairy cattle.

Practice, 2 hours a week.

A part of the practice work will consist of a study of the pedigrees of some of the more noted animals of each of the dairy breeds in order that the student may become familar with the best blood lines. The practice in feeding will consist largely of calculating rations for dairy cows, special attention being given to a study of Texas grown feeding stuffs and their value for milk production.

Prerequisite, *Animal Husbandry* 3.

(Required in Group D.)

7. The Feeding of Live Stock. Senior. First and second terms, 3 hours a week; with practice.

The subject of animal nutrition, the composition of available feeding stuffs, and the calculating of rations are treated fully. The course embraces a thorough study of the feeding of all classes of farm animals, horses, cattle, sheep and swine.

Texts: Profitable Stock Feeding, *Smith,*
Feeds and Feeding, *Henry.*

Practice, 2 hours a week.

The practice consists in part of the making of rations for different classes of stock from limited selections of feeding stuffs. The student is required to make abstracts of Experiment Station bulletins, and to keep fully informed as to the latest publications relating to the subject of feeding.

(Required in Group C.)

8. Advanced Judging. Senior. First term, 1 hour a week; with practice.

The lectures of this course treat further of the most approved types of pure-bred animals and of those used for the common market.

Practice, 4 hours a week.

The work of competitive judging is given prominence. Classes of the different kinds of live stock are selected as similar as possible to those which came together in the show rings of exhibitions.

Prerequisite, *Animal Husbandry* 3.

(Option 1, Group C.)

9. Live Stock Management. Senior. Second term, 2 hours a week; with practice.

The raising of horses, cattle, sheep, and swine, as a business, is discussed in full detail, covering all features of management in production and marketing. The management of stock farms and ranches is fully treated. A study is made of the methods used by some of the most successful stock farmers and ranchers of Texas and other States. Special attention is given to the management of pure-bred herds and flocks and to the keeping of private herd and flock records.

Practice, 2 hours a week.

The practice in live stock management consists of actual work in preparing different classes of stock for show and sale. The student is given work in trimming sheep, washing and curling the coats of cattle and polishing horns and hoofs. The work on horses consists of grooming, fitting of harness and decoration of manes and tails. Practice in filling out registration blanks for pure-bred stock, and the use of transfer blanks is also given.

Prerequisite, *Animal Husbandry* 5, 7.

(Option 1, Group C.)

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

15. Judging Market Types of Horses, Cattle, Sheep and Swine. First term, 6 hours a week. Practice.

In this course students are given thorough training in scoring and judging market types of horses, cattle, sheep and swine. The points of these and their value to stockman, butcher and consumer are fully discussed. A study of dressed carcasses is made.

Text: Judging Live Stock, *Craig.*

16. Judging Breed Types of Horses, Cattle, Sheep and Swine. Second term, 2 hours a week; with practice.

A modification of *Animal Husbandry* 3.

Text: Types and Breeds of Farm Animals, *Plumb.*

Practice, 2 hours a week.

Prerequisite, *Animal Husbandry* 15.

Second Year.

17. The Breeding of Live Stock and the Study of Pedigrees. Second term, 1 hour a week; with practice.

The lectures in this course treat of the principles of breeding and the methods used in the practice of breeding horses, cattle, sheep, and swine,—pure-bred animals, as well as those for the common market.

Text: . Breeding Farm Animals, *Marshall.*

Practice, 2 hours a week.

The practice consists principally of the study of pedigrees. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite, *Animal Husbandry* 16.

18. The Feeding of Live Stock. Second term, 2 hours a week; with practice.

This course embraces a study of the feeding of all classes of farm animals, horses, cattle, sheep and swine. The subject of animal nutrition, the composition of available feedstuffs and the calculating of rations, are treated fully.

Text: Elementary Treatise on Stock Feeds and Feeding, *Halligan.*

Practice, 2 hours a week.

The practice consists largely of calculating rations for different classes of farm animals, special attention being given to the study of Texas grown feed stuffs.

DEPARTMENT OF BIOLOGY.

PROFESSOR BALL, ASSISTANT PROFESSOR HAYDEN, MR. CASSIDAY, MR. WINTON.

The work of this department is designed to furnish the student with that accurate and thorough knowledge of the structure and functions of plants and of animals which is essential for those who purpose engaging in the arts of agriculture and horticulture.

Instruction is given by lecture and text, but especial emphasis is laid upon the work of the laboratory, where every effort is made to induce in the student habits of independent observation and thought.

The courses are as follows:

1. Zoology. Freshman. First and second terms, 3 hours a week; with practice.

A study of the animal kingdom with especial emphasis upon the physiology of animals is presented in this course. The habits and modes of life are studied and some attention is given to the development of animal life upon the earth. The text is used mainly as a book of reference, the student being encouraged to gain his knowledge from his own observations made in the laboratory and not from accounts in the textbook. Since the animal and plant worlds are closely related in many respects, a foundation is laid in this year for the more advanced study of plants in the Sophomore year.

Text to be assigned.

Practice, 2 hours a week.

In the laboratory typical representatives of the various groups of animals are studied. As far as possible economic or commercial forms are chosen, and the chief emphasis is laid on the physiological side of the study.

(Required in Course I.)

2. Botany. Sophomore. First term, 3 hours, second term, 2 hours a week; with practice.

The morphology and systematic relations of plants are studied in this course, which begins with an outline of the external and internal form and structure necessary to the more extended work in the physiology of the plant. The second term is devoted to systematic and ecologic botany in which the student is trained to identify plants, using as a basis his knowledge of their structure, and to apply both structure and function in accounting for their life rationships. Especial attention is given to plants of economic importance.

Texts: College Botany, *Atkinson*,
Flora of the Southern States, *Chapman*.

Practice, 2 hours a week.

The laboratory work is planned to illustrate the lectures, but more especially to train the student to acquire facts of structure and function by direct observation. In order to insure careful and correct interpretation of what is seen, each student is required to keep a notebook in which he records by drawings and notes the results of his work.

(Required in Course I.)

3. Rural Hygiene. Junior. First and second terms, 2 hours a week; with practice.

This course presents an outline of the relation of bacteria to every-day life, at home and on the farm. The rationale of sanitation, personal and general; the construction and operation of sewage disposal plants suitable for use in villages and in the country; the relation of insects, vermin, etc., to the health of man and of animals; sanitary milk and dairy processes, and the general relations of bacteria to soil fertility are carefully considered.

Text: Principles of Hygiene, *Bergey.*

Practice, 2 hours a week. Laboratory study of bacteria and of their activities; methods of disinfection, etc.

(Optional in Groups A, B, C.)

4. Plant Diseases. Senior. First and second terms, 3 hours a week; with practice.

The structure, physiology and classification of fungi are studied in the first term; in the second, types of the most important plant diseases occurring in the State are selected for study and the student is trained to identify the cause of the trouble and is shown the methods of spraying and of other corrective measures. Plant diseases due to other causes receive attention within the limits of time and material.

Text: Fungous Diseases of Plants, *Duggar.*

Practice, 2 hours a week.

In the first term the student will become acquainted with the form and structure of selected fungi, and will learn the routine methods of cultivation, experimentation, etc. In the second term, diseased plants are placed before him, and he is instructed in the diagnosis of each with its appropriate treatment.

(Option 1, Groups A, B.)

5. Plant Physiology. Senior. First and second terms, 2 hours a week; with practice.

An advanced course in physiology is here offered in which the functions of respiration, assimilation and nutrition receive especial attention. The course is designed for those who wish to pursue work of higher character in the field of general agricultural botany and at the same time to give, in the practical work, an introduction to the methods of research.

Text: Vegetable Physiology, *Green.*

Practice, 4 hours a week.

Laboratory manual, Practical Physiology of Plants, *Darwin & Acton.*

(Option 3, Groups A, B.)

6. Bacteriology. Senior. First and second terms, 2 hours a week; with practice.

In this course the general nature and relations of bacteria are considered in the first term, as exhibited by the study of selected types. In the second term the relations of bacteria to agricultural pursuits are examined; their activities in soil-building, dairy processes, various fermentations, such as of silage, curing and manufacture of farm products, etc.

Text: General Bacteriology, *Jordan.*

Practice, 6 hours a week.

Preparation of culture media, of pure cultures, staining and microscopical technique; methods of identification, etc., occupy the time allotted in the first term. In the second term the student makes analyses of water, milk, sewage, etc., and continues methods of identification of commoner forms.

Manual, Laboratory Bacteriology, *Moore.*

(Option 3, Groups A, B.)

7. Dairy Bacteriology. Senior. First and second terms, 2 hours a week; with practice.

This course is designed for students electing work in Dairy Husbandry. In the first term a rapid outline of the general nature and relations of bacteria is given, followed by a study of those forms which are directly related to changes in milk and other dairy products, dairy management and hygiene, etc. Methods of pure culture, analysis of milk, butter, etc., and of control of undesirable forms are studied in the second term.

Text to be selected.

Practice, 4 hours a week. First term, preparation of culture media; technique of dairy bacteriology; identification, etc. Second term, analysis of milk, cream, etc.

Manual, Bacteria in Milk, *Conn.*

(Group D.)

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

15. Zoology. First term, 3 hours a week; with practice.

A study of the familiar forms of animal life. The development of animal life, the life-histories of various animals, their habits and especially their relation to man are studied. Their behavior is also noted, as illustrating human physiology.

Text: College Zoology, *Hegner.*

Practice, 2 hours a week.

The laboratory work consists of the dissection of a few familiar forms, and observations on their behavior and mode of life. As in the Freshman course, the student is urged to depend upon his own observations rather than on the text, and to learn to understand and to be able to describe what he sees.

16. Botany. Second term, 3 hours a week; with practice.

Students in this course are offered work designed to present a clear outline of the fundamental facts of plant life upon which the intelligent handling and care of afrm crops are based. The term opens with a study of the plant as a whole and this leads to the systematic and ecologic relationships especially of those used as cultivated crops.

Text: A Practical Course in Botany, *Andrews.*

Practice, 2 hours a week.

The student is required to work out for himself and to make notes upon the structure of the plant and to use this knowledge in the systematic study of selected plants.

GRADUATE COURSES.

Students who have taken preliminary degrees at this institution, or at some other of equivalent rank, or those who may for special reasons desire advanced work in the biological sciences, will be admitted to graduate work in any one or more of the following courses:

In zoology—comparative anatomy and embryology of the vertebrates.

In botany—ecologic study of any family well represented in this vicinity; investigation of any assigned topic in plant physiology; monographic study of a pathogenic or non-pathogenic fungus; methods of research and technique in bacteriology, or research work in agricultural bacteriology.

In each case, courses of advanced reading will be assigned and a thesis required.

DEPARTMENT OF DAIRY HUSBANDRY.

ACTING PROFESSOR RIDGWAY, MR. CARPENTER, MR. PATTERSON.

The courses of study offered in this department are for the purpose of giving special training in the manufacture and handling of dairy products.

These courses may be divided as follows:

(1) The Care and Handling of Milk.
(2) The Manufacturing of Products from Milk.
(3) The Management and Operation of Creameries.

Special importance is given to the laboratory work in connection with these courses as the necessity of practical training along these lines is fully appreciated. The College creamery, which is run in connection with this department, affords laboratory facilities for working out the practical problems involved in these courses.

The courses are as follows:

1. Milk Testing. Freshman. Second term, 2 hours a week; with practice.

A brief course in the composition of milk and the testing of milk and its products for the percentage of butterfat with special reference to herd testing and record keeping.

Text: Milk and Its Products, *Wing.*

Practice, 2 hours a week.

The estimation of the percentage of butterfat in milk and its products by the Babcock method and the use of the lactometer.

(Required in Course I.)

2. Dairy Machinery and Dairy Buildings. Junior. First term, 3 hours a week; with practice.

Lectures and recitations on the care and handling of dairy machinery and on the construction of creamery and dairy buildings, including the silo.

Practice, 4 hours a week.

All machinery in the College creamery will be studied regarding its cost, installation and operation.

(Required in Group D.)

3. Butter Making. Junior. Second term, 2 hours a week; with practice.

A course dealing with butter-making in the creamery and on the farm, and the marketing and judging of butter.

Text: Creamery Butter-making, *Michels.*

Practice, 2 hours a week.

(Required in Group D.)

4. Creamery Management. Senior. First term, 3 hours a week; with practice.

Lectures and recitations on the organization and management of creameries, dealing especially with creamery bookkeeping.

Practice, 2 hours a week.

Library work on the creamery organizations and creamery literature. (Required in Group D.)

5. City Milk Inspection and Ice Cream Making. Senior. Second term, 3 hours a week; with practice.

This course deals: first, with the problems of the city milk supply, the methods of producing certified milk and the determination of adulterations or the use of preservatives in milk; and second, the composition and manufacture of ice cream on a commercial basis.

Practice, 2 hours a week.

Text: Jensen's Milk Hygiene, *Pearson.*

(Required in Group D.)

6. Advanced Dairying. Senior. First term, 3 hours a week; with practice.

Farm butter-making, clean milk production, and ice-cream making. An elective course designated especially for students in Group C.

Practice, 2 hours a week.

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

1a. Milk Testing. Second term, 4 hours a week. Practice.

A modification of the practice of course 1. The practice will occasionally be supplemented by a lecture.

Second Year.

16. Farm Dairying. First term, 3 hours a week; with practice.

The use and care of cream separators, the handling of cream, and the manufacture of butter on the farm. Instruction will also be given in the care of dairy cows and the raising of dairy calves.

Practice, 4 hours a week.

DEPARTMENT OF ENTOMOLOGY.

PROFESSOR NEWELL, MR. PADDOCK.

The courses in Entomology are so arranged as to give the students in Agriculture a practical knowledge of the lives, habits and economic importance of insects. The department is equipped with models showing the external and internal anatomy of various insects, with dissecting tools and microscopes, compound microscopes, apparatus for histological work, a collection of insects for reference and a good entomological library for students' use. The department also has a building, 38x46 feet, well equipped with spraying machinery and insecticides for practice work and experiments.

The courses are as follows:

1. Systematic Entomology. Junior. First term, 2 hours a week; with practice.

In this course the student is taught the anatomy and physiology of insects as a basis for the development of practical measures of control. The various Orders of insects are studied, particular attention being given the forms that are decidedly injurious or beneficial. Considerable time is given to the biological aspect of the subject. The student also becomes familiar with entomological literature and with the methods by which insects are identified and classified.

Text: Entomology, Its Biological and Economic Aspects, *Folsom.*

Practice, 2 hours a week.

In the laboratory the student studies both external and internal anatomy of insects, aided by the models and by actual dissection. Drawings are made of insect structures and of specimens typical of the various Orders. In connection with the practice work the student is required to make a collection of local insects, consisting of at least fifty specimens, all of which must be properly pinned, labeled and correctly named.

(Required in Course 1, Groups A, B; optional in Group C.)

2. Economic Entomology. Junior. Second term, 2 hours a week; with practice.

This course is the logical continuation of course 1 and is open only to students who have successfully completed that course. The student, having become familiar with insect anatomy and physiology, here takes up the applied aspects of the subject. Special attention is given to the life history of the insects that are injurious to staple crops, fruit and truck crops, live stock, etc., together with measures for their control by means of intelligent farm practice and the use of insecticides. The importance of parasites and diseases and their utilization is also taught.

Text: Economic Entomology, *Smith.*

Practice, 2 hours a week.

In the practice the student prepares various insecticides for use, learns how to handle spraying machinery and, so far as opportunities permit, tests the effect of various control measures upon injurious insects. Methods of fumigation for the destruction of insects infesting nursery stock, buildings and stored products are put in practice. Field trips are made to study injurious insects and for observing the effects of cultural methods or climatic conditions upon the destructiveness of insects.

Prerequisite, *Entomology* 1.

(Required in Course 1, Groups A, B; optional in Group C.)

3. Fruit Insects. Senior. Elective. First term, 2 hours a week; with practice.

This course is especially designed for students who are specializing in horticulture and wish more definite information concerning the insect pests of the fruit and truck crops. In this course a detailed study is made of the life history, habits and control of the pests of these crops. Special attention is given to control measures adapted to Texas conditions, and to the value of parasites and of orchard management in the practical control of pests.

Text: Insect Pests of Farm, Garden and Orchard, *Sanderson.*

Practice, 2 hours a week.

In the practice the student is taught the identification of scale-insects and other fruit pests of importance. Particular attention is given to those fruit-insects which occur in Texas. Each student is required to make a detailed study of some horticultural pest from available literature, with a view of becoming familiar with all the current information thereon.

Prerequisite, *Entomology* 2. (Option 1, Group B.)

4. Advanced Entomology. Senior. Elective.

This course is designed for students who select thesis work in Entomology and will be outlined according to the needs of each individual student.

TWO YEAR COURSE IN AGRICULTURE.

Second Year.

10. Economic Entomology. Second term, 2 hours a week; with practice.

A general outline of the classification of insects is here offered, together with a sufficient study of anatomy and biology for the understanding of control measures. Particular attention is given to injurious insects of field, garden and orchard, together with the methods and insecticides by which they may be controlled.

Text: Elementary Entomology, *Sanderson and Jackson.*

Practice, 2 hours a week.

The practice consists of sufficient dissection and study in the laboratory to familiarize the student with the different Orders of insects. This is supplemented by field studies of injurious forms, together with the preparation of various insecticides and their use.

DEPARTMENT OF HORTICULTURE.

PROFESSOR KYLE, ASSISTANT PROFESSOR BLACKMON, ASSISTANT PROFESSOR A. T. POTTS.

The aim of this department is twofold: First, to develop scientific horticulturists; second, to turn out practical fruit and truck growers. This statement does not mean there are two distinct courses, but that when a student finishes the course he is prepared to engage in either the scientific or the practical side of horticulture. The course of study covers somewhat fully the different lines of horticulture and embraces the following subjects: Nursery methods, truck gardening, orchard culture, nut culture, plant breeding, viticulture, spraying, citrus fruits, experimental horticulture, besides work in landscape gardening, floriculture and elementary forestry. The student is taught these subjects by means of text-books and lectures. In order to develop the practical side of the student, he is given from two to four hours a week in outdoor work, which comprises practice in budding, grafting, pruning, thinning fruit, spraying, setting out orchards and planting vegetables. He is taught how to mix and apply fertilizers, and he is also shown the best methods of cultivating the different horticultural crops. The department now has growing on the College grounds a commercial orchard of peaches, thirty varieties of paper-shell pecans, twenty varieties of grapes, a persimmon, pear and fig orchard, and small fruits consisting of blackberries and dewberries.

Besides the theoretical and practical work given at the College, the student is sent out during the summer to work in the orchards and truck farms of the largest growers, not only in this but in several of the other leading fruit States. Excursions are arranged during the school year for visiting the largest and most successful fruit and truck farms in the State. This not only gives the young man a good knowledge of the horticultural work done in his own State, but also enables him to become personally acquainted with some of the best practical horticulturists of the United States, and at the same time to familiarize himself with the methods used by such men.

The recent laws passed by the Legislature requiring elementary agriculture to be taught in the public and normal schools has created a considerable demand for graduates of agricultural colleges as teachers in the public schools. On account of the fact that most of the work of elementary agriculture is of a horticultural nature this department is making a strong effort to prepare young men for this important line of work. A number of graduates of the College are already engaged in this work in the State, and at the present time the department is unable to supply the demand made on it for young men well prepared in the different branches of horticulture, and it can be safely stated that this great industry has only just begun in the State.

The courses are as follows:

1a. Plant Propagation. Sophomore. First term, 2 hours a week; with practice.

Lectures and recitations are given on the fundamental principles and methods of plant propagation, including both vegetables and fruits.

Text: The Nursery Book, *Bailey.*

Practice, 2 hours a week.

Practice in propagation of plants from seed, budding, grafting, etc., both in the laboratory and in the field. Special work is given in top working of trees by grafting and budding.

(Required in Course 1.)

2. Vegetable Gardening. Sophomore. Second term, 3 hours a week; with practice.

Detailed instruction in planting, equipping and operating vegetable gardens for home and commercial purposes, and practical demonstrations and experience in the field; a thorough discussion of the methods used in Texas in growing the most important vegetable crops.

Lectures.

Practice, 2 hours a week.

The practice is devoted to the building of hot-beds, cold-frames, the mixing and application of fertilizers, planting, cultivating, spraying and harvesting of vegetable crops.

Prerequisite, *Horticulture* 1a.

(Required in Course I; and in the first year of the two-year course.),

3. Tree and Vine Fruits. Junior. First term, 3 hours a week; with practice.

A comprehensive study of the various kinds of fruit-orchards and vineyards, embraces the problems of location and soils, protection from insects and diseases, pruning, cultivating, harvesting and marketing.

Lectures.

Text: Popular Fruit Growing, *Green.*

Practice, 2 hours a week.

Practical exercises in laying out orchards, spraying, etc.

Prerequisite, *Horticulture* 1a.

(Required in Group B; and in the second year of the two-year course.)

4. Plant Breeding. Junior. Second term, 2 hours a week; with practice.

This course is planned to give the student a better understanding of the benefits to be derived from the intelligent breeding of plants. The relation of horticultural varieties and hybrids to each other and to their parent species is discussed, together with the principles of pollination, crossing and hybridization.

Text: Plant Breeding, *Bailey.*

Practice, 2 hours a week.

Most of the practice work is devoted to the cross pollination of our most common plants, and to the study of natural variations arising among garden plants.

(Required in Groups A, B.)

5. Spraying. Junior. Second term, 1 hour a week; with practice.

The history and development of spraying in the United States and foreign countries is studied, special attention being given to the evolution of spraying machinery and to formulas.

Text: Spraying of Plants, *Lodeman;* lectures.

Practice, 2 hours a week.

Practical work in making various spraying mixtures for insects and diseases and applying the preparations to orchard and vegetable crops.

(Required in Group B.)

6. Nut Culture. Junior. Second term, 2 hours a week.

This course includes a study of those nuts which are of the most economic importance. Special attention will be given to the native nuts. Top-working the native pecan and hickory to improved varieties of pecans will be fully discussed.

Lectures.

(Required in Group B.)

7. Pomology. Senior. First term, 3 hours a week; with practice.

A comprehensive study is made of the evolution of our native fruits. Special attention is given to the grape, plum, mulberry, apple, cherry, blackberry, dewberry, strawberry, persimmon, etc.

Text: Evolution of Our Native Fruits, *Bailey.*

Practice, 2 hours a week.

Practice in systematic pomology is given with such fruits as can be obtained during the Fall.

Prerequisite, *Horticulture* 3.

(Required in Group B.)

8. Elementary Forestry. Senior. First term, 2 hours a week; with practice.

A brief study of the history of forestry, means of propagation and development and the effects of forests on climate, etc.

Text: American Forestry, *Green.*

Practice, 2 hours a week.

Practice in estimating the quantity of lumber per acre in square and cubic feet; also in estimating the height of standing trees.

(Option 1, Group B.)

9. Experimental Horticulture. Senior. Second term, 2 hours a week; with practice.

Practical methods of planning and carrying out experiments, such as are in vogue by the most up-to-date experiment stations.

Practice, 2 hours a week.

The student will be required to plan his experiment, prepare the land, mix and apply the fertilizer, sow the seed, cultivate, spray and harvest the crop, and make a report on the results obtained.

(Required in Group B.)

10. Citrus Fruits and Fig Culture. Senior. Second term, 2 hours a week; with practice.

A study of all the species of citrus fruits grown in this country. Special attention is given to the growing of the hardier varieties that are adapted to the Texas coast region.

Lectures.
Text: Citrus Fruits and Their Culture, *Hume.*
Practice, 2 hours a week.

Practice in the study of propagation of the different species of citrus tree; special demonstration work in protecting citrus trees from frost.

(Option 1, Group B.)

11. Floriculture and Landscape Gardening. Senior. Second term, 2 hours a week; with practice.

The first part of this course is devoted to a full discussion of the methods of growing bedded plants, cut flowers, orchids, palms, etc. The second part is devoted to a study of the history and development of landscape gardening, the engineering and planting of parks, cemeteries and home grounds.

Text: Greenhouse Management, *Taft.* Lectures.
Practice, 2 hours a week.

Practice in the propagation of ornamental plants, the laying out of beds and the proper arrangement of plants on the home ground; special work in designing and laying out parks and cemeteries.

(Option 1, Group B.)

TWO YEAR COURSE IN AGRICULTURE.

First Year.

15. Plant Culture and Propagation. First term, 3 hours a week; with practice.

A modification of course 1. The first part is devoted to plant culture, and followed by a thorough discussion of the propagation of plants, including all the fruits, ornamentals, and vegetables.

Practice, 2 hours a week.

Practice work in the propagation of seedlings and the different forms of budding and grafting, layering, etc.

(Required in the first year of the two-year course in Agriculture.)

DEPARTMENT OF VETERINARY SCIENCE.

PROFESSOR FRANCIS, DR. MARSTELLER, DR. DUNN.

Instruction in Veterinary Science is given only to those taking the agricultural course. The class rooms and laboratory are fairly well equipped with books, instruments, skeletons, diseased bones, tumors, parasites, charts, etc. A small hospital erected in 1908 affords opportunity to witness surgical operations and the management and treatment of sick animals.

The courses are as follows:

1. Anatomy and Physiology of Domestic Animals. Sophomore. First term, 2 hours a week; with practice.

This course is intended as an introduction to the study of Veterinary Science. It treats the fundamental processes of animal nutrition in detail so that each man may be prepared to meet the problems that arise in the economic production of beef, pork, and dairy products.

Reference books: Physiology of Domestic Animals, *Smith;* Veterinary Anatomy, *Sisson.*

Practice, 2 hours a week.

During the practice period there will be demonstrations on the composition and circulation of the blood, dissections of the heart, bowels, nervous system, eyes, muscles, and studies of the bones, joints and ligaments. The class will be divided into sections of four men each, so that each man can be graded on his work.

(Required in Course I.)

2. Pharmacology. Junior. First term, 2 hours a week; with practice.

A study of the substances used as medicines for animals, embracing a discussion of their origin, properties, preparation, administration, action, use, and dose.

Text: Veterinary Materia Medica and Therapeutics, *Winslow.*

Practice, 2 hours a week.

Each student is required to prepare powders, decoctions, waters, emulsions, spirits, tinctures, liniments, ointments, etc.

(Required in Groups A, C, D; optional in Group B.)

3. Non-infectious Diseases. Junior. Second term, 2 hours a week; with practice.

A discussion of diseases of locomotion, digestion, respiration, etc., of a non-contagious nature.

Text: Veterinary Medicine, Vols. 1, 2, 3, 4, 5, *Law.*

Practice, 2 hours a week.

Those who have not had a sufficient amount of dissection to understand the class work, may be required to spend the first few weeks in reviewing the anatomy of the parts under discussion. The hospital provides quite a number of subjects for observation and surgical operation.

(Required in Groups A, C. R; optional in Group B.)

4. Obstetrics. Junior. Second term, 2 hours a week; with practice.

A study of the processes of reproduction of animals. During the consideration of the subject, many points on embryology, barrenness, artificial breeding, castration of males and females, are brought out.

Text: Veterinary Obstetrics, *Williams.*

Practice, 2 hours a week.

Practice will embrace a dissection of the reproductive organs, and following this are frequent opportunities for observing diseases and irregularities incident to reproduction.

(Required in Groups C, D.)

5. Infectious Diseases. Senior. Second term, 2 hours a week.

This lecture course will embrace a discussion of such diseases as anthrax, black leg, rabies, glanders, hog cholera, tuberculosis, Texas fever, infectious anæmia, and their remedies. Especial mention will be made of those which may be injurious to public health through the consumption of meats or milk. Students have abundant opportunity to see hogs treated for cholera, and cattle for Texas fever.

Text: Pathology of Infectious Diseases of Animals, *Moore.*

(Required in Groups C, D.)

6. Anatomy. Senior. First and second terms, 3 hours a week; with practice.

A histological study of normal and diseased tissues, the dissection of special regions in regard to certain operations, the systematic examination of such groups as the cranial nerves, brachial plexus, or perhaps the blood, or lymph supply of some region. This work will vary with the qualifications and needs of those who elect it.

Texts: Stoke's Text-Book of Histology, *Lewis.*
Pathological Technique, *Mallory and Wright.*

Practice, 6 hours a week.

(Option 3, Group C.)

7. Advanced Laboratory Methods. Senior. Elective. First and second terms, 3 hours a week.

Those who wish to pursue this course must arrange with the instructors in advance, as it is not always possible to supply the material, teaching force, or laboratory space on short notice. It will be open only to those who have learned to work without the constant aid of an instructor. It may embrace such work as the finer grades of blood—work for protozoa or bacteria, the ultra-microscopical examination of suspected material, the preparation of serial sections, or of fine injections, or of corrosive anatomy, etc., or the student may prefer the preparation of biological products for diagnosis or cure, such as mallein, tuberculin or the vaccines for hog cholera, black leg, anthrax, Texas fever, or the preparation of bacterins for pus-organism infections.

TWO-YEAR COURSE IN AGRICULTURE.

Second Year.

16. Animal Diseases. Second term, 3 hours a week; with practice.

A popular course on the common diseases of animals on the farm, and how to prevent and cure them.

Text: Veterinary Studies for Agricultural Students, *Reynolds.*

Practice, 2 hours a week.

A hasty review of the essential features of animal nutrition precedes the practice proper. Dissection of the organs of nutrition is provided, and following this an examination of the feet, eyes, etc., and the simpler surgical operations. Animals are examined for soundness, and each student must do the required work at its proper time.

DEPARTMENT OF AGRICULTURAL EXTENSION.

C. M. EVANS, SUPERINTENDENT, O. H. SELLERS, CORRESPONDENCE COURSES, C. B. NICHOLS, SECRETARY, R. R. ROSA, ASSISTANT.

The department of agricultural extension was established for the purpose of extending the benefits of the College to men actively engaged in farming and to others interested in agricutural pursuits but not in a position to enter upon a regular college course. In order to accomplish this purpose, the work of the department has been planned to include the subdivisions mentioned below.

For more detailed information concerning any of them, those interested should address the Superintendent.

1. Correspondence Courses in Agriculture.

The following correspondence courses are offered:

1. Elementary Agriculture for Teachers.
2. Soils.
3. Fertilizers and Soil Fertility.
4. Grain Crops.
6. Hay and Forage Crops.
7. The Silo and Ensilage Crops.
8. Farm Dairying.
11. Plant Propagation.
12. Vegetable Growing.
13. Small Fruits.
15. Citrus Fruits.
16. Beef Cattle.
17. Dairy Cattle.
18. Dual Purpose Cattle.
19. Sheep.
20. Hogs.
21. Horses and Mules.
22. Breeding Farm Animals.
23. Feeds and Feeding.

2. Short Summer Course for Farmers. (At the College.)

This course is planned especially for the practical farmer who has not had the opportunity of taking a regular agricultural course. The work is essentially practical. It includes lectures, demonstrations, and practice in stock and grain judging; cotton classing; horticulture, including vegetable gardening and orcharding, pruning, spraying, budding, grafting and tree surgery; feeds and feeding; veterinary science, including abortion and artificial impregnation, hog cholera, tuberculosis and Texas fever; soils, farm crops and farm machinery; dairying, including butter-making, silos and ensilage; insects and plant diseases; fertilizers; terracing and good roads.

The work will extend through one week and will be divided into four main groups, namely: Agronomy, Animal Husbandry, Dairy Husbandry and Horticulture.

No entrance examination will be required.

There will be no charge for tuition, but a fee of $2.50 will be charged to cover expenses of the course.

The course will be given during the latter part of July so as to meet the convenience of the greatest number of the farmers of the State.

Board and lodging will be furnished for $1.25 per day. Those not boarding at the Mess Hall will be charged 25 cents per day for lodging.

Low rates will be offered on all railroads.

All students must register at the office of the Dean.

3. Educational Demonstration Trains.

From time to time the College has operated special agricultural trains, on which lectures were delivered by experts in various branches of agriculture. The trains carried interesting exhibits of livestock, dairy machinery, agricultural and horticultural products, etc. This work will be continued in co-operation with the various railroads of the State.

4. Local Short Courses Over the State.

The department is prepared, in co-operation with the College of Industrial Arts at Denton, to conduct short courses in agriculture and domestic science in a limited number of places over the State. These courses last one week. They are practically a movable College of Agriculture and Domestic Science. The actual expenses of these courses are borne by the communities in which they are held.

5. Co-operation With Secondary Schools.

The law requires that agriculture be taught in the public schools; and this department will co-operate with the authorities of any school desiring aid as to the methods of carrying out this requirement.

6. Organization of Farmers' and Boys' and Girls' Clubs.

Much good has already been accomplished in this State by the organizations of such clubs. This department is prepared to aid in the furtherance of this work.

7. Co-operation With Agricultural Fair Associations.

This department will co-operate with fair associations in securing judges for exhibits, educational demonstrations, and lectures of a popular nature on agricultural subjects.

8. Promotion of State Industrial Contests.

At present the department is co-operating with the Texas Industrial Congress by furnishing bulletins of information on crop production to contestants for the large premiums offered by that organization for the production of large yields of corn and cotton. It will co-operate with other organizations desiring its services in like matters.

9. Farmers' Co-operative Demonstration Work.

The Farmers' Co-operative Demonstration Work is carried on jointly by this Department and the Bureau of Plant Industry of the United States Department of Agriculture at Washington, D. C. The plan of co-operation consists in the placing of an agricultural expert in a county under the joint supervision of this Department and the United States Department of Agriculture for the carrying on of agricultural demonstrations in co-operation with the farmers of the county.

Any county wishing to secure the services of such a demonstration agent should address Extension Department at College Station for further particulars.

Under an agreement entered into October 1, 1912, between the Bureau of Plant Industry, United States Department of Agriculture and the Agricultural and Mechanical College of Texas, the Farmers Cooperative Demonstration work is conducted by the following joint agents of the United States Department of Agriculture and the Department of Agricultural Extension of the Agricultural and Mechanical College:

W. F. Proctor, State Agent in charge of Demonstration Work; J. L. Quicksall, Assistant State Agent; Four District Agents; about one hundred county Agents; H. H. Williamson, assistant in charge of Club Work; Miss Betty Rogers, assistant in charge of the Girls Club Work; eighteen lady agents.

THE TEXAS AGRICULTURAL EXPERIMENT STATIONS.

DIRECTOR YOUNGBLOOD.

The Main Station, located at College Station, was organized January 25, 1888, and is supported entirely by funds appropriated by the United States Government. This support comes in two distinct appropriations. The Hatch Fund of $15,000 annually, was the original appropriation provided for by Act of Congress in 1887, and may be used for tests, experiments and investigations which may be either original or unoriginal in their nature. The Adams Fund, also of $15,000 per annum, can be used only for original investigation and research, and for incidental expenses bearing directly upon this work. Salaries may be drawn from either fund in accordance with the character and amount of work done under each.

Besides the Main Station, there are eleven State Sub-Stations located in different parts of the State. The Beeville Station, in Bee county, was established in 1895; the Troup Station, in Smith county, was established in 1903. In 1910 nine others were established as follows: A fruit and farm crops station at Angleton, Brazoria county; a rice station, operated in co-operation with the United States Department of Agriculture, at Beaumont, Jefferson county; a small grains station at Denton, Denton county; a plains station in the Panhandle of Texas, at Lubbock, in Lubbock county; an East Texas farm crops station, including tobacco work, at Nacogdoches, in Nacogdoches county, in co-operation with the United States Department of Agriculture; an irrigation station at Pecos, Reeves county; a farm crops station at Spur, in Dickens county, on the Permian Red Beds soil area; a black land farm crops station between Temple and Belton, in Bell county; and a feeding and breeding experiment station near College Station, Brazos county, operated in co-operation with the Division of Animal Husbandry of the Main Station. At Chillicothe, in Hardeman county, the Division of Agronomy of the Main Station is working in co-operation with the Office of Forage Crops, United States Department of Agriculture. This station is also located in the Permian Red Beds region.

The experiments carried out at the Main Station and the State Sub-Stations are reported from time to time in bulletin form sent free to the farmers of the State, and others interested in agricultural development, upon application to the Director. In addition to these, bulletins involving more or less investigation into agricultural problems, press bulletins giving popular information in regard to agricultural topics, are sent out from time to time.

The Stations are all under the direction of the Director of Experiment Stations, and the Sub-Stations under the immediate supervision of a local superintendent at each Station. The Main Station includes a working staff composed of a veterinarian, a chemist, a horticulturist, an animal husbandman, an entomologist, an agronomist, a plant pathologist and physiologist, a farm management expert, with their assistants, and the necessary force of stenographers and clerks to carry on the office work.

The Chemical Division of the Station has for sometime been making an extensive study of Texas soils and crops, and fertilizers best suited to the different types of soil in the various parts of the State. This Division also has under way an extensive study and investigation into the relative value of various feeding stuffs as indicated by their respective composition and digestibility.

The Division of Agronomy has charge of the work not only of the Main Station but of all the Sub-Stations as well,—which includes field experiments involving the crops best adapted to various soils, how the fertility of the soil may be maintained by an intelligent system of fertilizing and rotation of crops; cultural methods for different crops, especially corn and cotton; the introduction of new plants, with study of their adaptability to local conditions, and the improvement of agricultural plants by selection and cross breeding.

The Division of Entomology is engaged in studying the methods by which the ravages of the boll weevil may be lessened on the cotton crop, special problems in connection with other injurious insects, and work in connection with the bee industry.

The Division of Horticulture is engaged extensively in the improvement of berries, particularly blackberries and dewberries, by cross breeding and selection, and also has under way extensive studies relative to the control of Crown Gall disease by means of disinfectants and other chemicals.

The Division of Animal Husbandry conducts feeding experiments with cattle, hogs and sheep, testing various combinations of standard feeds, with a view of determining their relative value and economy. The work of this Division is conducted in co-operation with the Feeding and Breeding Station, where it has under way at the present time one of the most elaborate steer feeding experiments ever attempted by the Texas Experiment Station. A sheep breeding experiment wherein pure-bred sheep of the various breeds are being crossed with the Karakule, with a view to producing a more satisfactory combination wool and mutton sheep.

The Division of Plant Pathology and Physiology is giving particular attention to the bacteria which grow in tubercles on the roots of the various legumes and appropriate nitrogen from the atmosphere; with a view of determining whether these bacteria are interchangeable from one legume to another, and whether the principal types of soil in Texas are already inoculated by nature with these bacteria, or whether it will be necessary for the success and growth of the legumes to inoculate each soil and crop specifically.

The Division of Veterinary Science is engaged upon a further study of Texas fever and the means of controling it, and with infectious anæmia of the Horse. This Division is also engaged in producing hog cholera serum which is very successful as a preventive of cholera in hogs.

The Division of Farm Management is engaged at the present time in an investigation concerning truck raising with a view of determining the proper relation of the trucking enterprise to the general farm. This leads to the proposition of farm reorganization with a view of getting the proper distribution of labor of men and teams, and the proper relation of the various crops to stock raising. As soon as possible this work will be taken up over the entire State. This means the organization of the farm into a profitable business proposition. While this investigational work is being carried on the men engaged in the work visit many farms throughout the State, giving information that leads to better and more profitable farming.

All the Divisions and the office of the Director carry on a heavy correspondence with the farmers and stockmen of the State, disseminating in this way much useful information in regard to local conditions and agricultural problems in various sections of the State.

The Sub-Stations give all their time to field experiments in order that the local problems may be solved. The Director will be glad to answer questions concerning agricultural problems in the vicinity of the respective Sub-Stations. The superintendents of the various Sub-Stations will co-operate with farmers as much as their time will allow, with the view of securing better farm practices and systems of farm management throughout the State.

Requests for bulletins of the Experiment Station should be made, invariably, to the Director of Experiment Stations, College Station, Brazos county, Texas. Delays in getting publications to those asking for them are frequently incurred by the requests being sent to members of the Station Staff and officers of the College not connected with the Station, who must refer them to the Director.

It is the earnest desire of the administration to make the Texas Agricultural Experiment Stations of the greatest possible service to the greatest number of Texas farmers, and to that end the Director urges their co-operation and suggestions.

THE FEED CONTROL DIVISION OF THE EXPERIMENT STATION.

STATE FEED INSPECTOR BOYETT.

This division has charge of the enforcement of the law that regulates the sale of concentrated feed stuffs in Texas. All concentrated feed stuffs, including wheat, bran, corn, chops, cottonseed meal, etc., are subject to the requirements of the law. Before selling or offering for sale any concentrated feed stuff the manufacturer or party who causes it to be sold or offered for sale must deposit with the Feed Control Department a sealed glass jar or bottle containing not less than one pound of each kind or brand of feed stuff. The sample must be accompanied by an affidavit that it is a fair average sample of the feed stuff to be sold.

The law imposes a tax of 10 cents a ton on all ground or chopped concentrated feed stuff. This tax is collected by the sale of tax tags. The manufacturer or importer must print on the tax tags the following information: Name of the feed stuff, name of ingredients if mixed, percentage of ingredients if adulterated, number of net pounds in package, name and address of the manufacturer or importer, place of manufacture and the guaranteed analysis. A tax tag must be attached to each package or bag of feed stuff before it can be offered for sale. The law requires this division to make annually one or more analyses of each feed stuff sold or offered for sale under this act, and empowers this division to take samples which shall be drawn from not less than 5 per cent of the whole lot inspected. The results of the analyses and additional information are published in reports or bulletins which are sent out to the farmers of the State. About fifty thousand of these reports are distributed annually.

This division has in its employ four men who spend their entire time inspecting to ascertain if the weights and quality of all concentrated feeding stuffs are as claimed for them by the manufacturer, and in collecting samples for analysis.

The School of Engineering

FACULTY OF THE SCHOOL OF ENGINEERING.

R. T. MILNER,
President.

J. C. NAGLE, M. A., C. E., M. C. E.,
Dean.

CHARLES PURYEAR, M. A., C. E.,
Dean of the College and Professor of Mathematics.

J. C. NAGLE, M. A., C. E., M. C. E.,
Professor of Civil Engineering.

D. W. SPENCE, C. E.,
Professor of Structural Engineering.

C. P. FOUNTAIN, A. M.,
Professor of English.

J. C. BLAKE, Ph. D.,
Professor of Chemistry and Chemical Engineering.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

O. F. CHASTAIN,
Professor of History.

J. B. BAGLEY, B. S.,
Professor of Textile Engineering.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

J. W. KIDD, E. E.,
Professor of Physics.

R. J. POTTS, A. B., C. E.,
Professor of Highway Engineering.

A. MITCHELL, B. S.,
Professor of Drawing.

LEVI G. BROWN, First Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics and Commandant of Cadets.

S. J. FOUNTAIN, B. S.,
Professor of Architecture.

W. T. WRIGHT, B. S., A. B.,
Acting Professor of Physics.

COURSES IN THE SCHOOL OF ENGINEERING.

In the School of Engineering, four-year courses are offered in Architecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering and in Textile Engineering. Each of these courses leads to the degree of Bachelor of Scence (B. S.), the particular course pursued being specified in the diploma. In Textile Engineering a two-year course is also offered. In the Civil Engineering department a short winter course, intended to be of assistance particularly to county surveyors and highway superintendents, is likewise offered. Graduate courses leading to the degrees of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, and Textile Engineer, respectively, are offered to young men who desire to pursue their studies beyond the field covered by the four-year courses. Descriptions of the various courses will be found in the pages alloted to the several departments.

In all the engineering courses a considerable portion of the student's time is devoted to the study of general subjects, such as English, history, mathematics, physics, chemistry, drawing, and the use of shop tools. The military training is of especial value as better fitting young engineers to be organizers and directors of men. In the several courses the more technical studies are intended to equip the students for the particular fields of engineering development they desire to enter. The graduate courses are altogether technical, but in each of them a portion of the time of the student is devoted to work in departments other than the one in which he takes his major studies.

At intervals throughout the session non-resident lecturers, usually men who have attained prominence in some branch of engineering or industrial pursuit, are invited to address the students in order that they may more closey conlnect their college instruction with the work they will be called upon to do after they enter upon their professional careers. For the same reason, inspection trips to works or plants of interest to engineers are made, usually during the senior year, under the direction of some member or members of the teaching staff. These trips afford the student the opportunity of seeing many things of interest and value.

COURSE IN ARCHITECTURE.

The aim of this course is to prepare young men for the general practice of architecture. While considerable stress is put upon the aesthetic side of this work, students are thoroughly grounded in the underlying principles of construction, sanitation, heating, and ventilating.

Students who have successfully completed this course are prepared to hold responsible positions with practicing architects, and after a few years experience, they should be well equipped to enter the profession of architects.

IX.—COURSE IN ARCHITECTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Architecture 24 Elements of Design.	1
English 1 Rhetoric and Composition.	3	Drawing 2 Descriptive Geometry.	1
Mathematics 1 Solid Geometry.	3	English 1 Rhetoric and Composition.	3
Mathematics 2 Algebra.	3	Mathematics 2 Algebra.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mathematics 3 Trigonometry.	3
Physics 3 Elementary.	2	Mechanical Engineering 1 Elementary Mechanics.	2
		Physics 3 Elementary.	2
	16		17
Architecture 20	8	*Architecture* 20	8
Architecture 22	4	*Architecture* 22	4
Drawing 1	2	*Drawing* 1	2
Physics 3	2	*Physics* 3	2
	16		16

SOPHOMORE YEAR.

Architecture 25 Principles of Composition.	1	Architecture 26 History of Architecture.	2
Architecture 26 History of Architecture.	2	Architecture 27 Carpentry Construction.	2
Architecture 27 Carpentry Construction.	2	English 2 Literature.	2
English 2 Literature.	2	English 3 Composition.	1
English 3 Composition.	1	History 2 English.	2
History 2 English.	2	Mathematics 5 Calculus.	6
Mathematics 4 Analytics.	6	Military Science 1 Drill Regulations.	1
Military Science 1 Drill Regulations.	1	Physics 6 Electricity and Magnetism.	2
	17		18
Architecture 27	2	*Architecture* 27	2
Architecture 28	8	*Architecture* 28	8
Architecture 29	4	*Architecture* 29	2
		Physics 6	2
	14		14

JUNIOR YEAR.

Architecture 30 History of Architecture.	2
Architecture 31 Masonry Construction.	2
Architecture 34 Building Sanitation.	1
Chemistry 1a Inorganic.	3
Civil Engineering 6 Mechanics of Materials.	4
English 5 Argumentation.	1
	13

Architecture 32	2
Architecture 37	4
Architecture 39*a*	10
Chemistry 1*a*	2
Civil Engineering 6	2
	20

Architecture 35 Heating and Ventilating.	1
Architecture 36 Steel Construction.	2
Electrical Engineering 6 Lighting and Wiring.	1
Chemistry 1a Inorganic.	3
Civil Engineering 12 Stresses.	2
English 5 Argumentation.	1
	10

Architecture 36	2
Architecture 37	4
Architecture 39*a*	14
Chemistry 1*a*	2
Civil Engineering 12	2
	24

SENIOR YEAR.

Architecture 40 History of Ornament.	2
Civil Engineering 14 Stresses.	2
Economics 4 Economic Organization.	3
English 6 Public Speaking.	1
Military Science 2	1
	9

Architecture 43	16
Architecture 45	4
Architecture 47	4
Civil Engineering 14	2
	26

Architecture 41 Business Practice.	1
Architecture 42 History of Sculpture and Painting.	2
Economics 4 Economic Organization.	3
English 6 Public Speaking.	1
	7

Architecture 43	20
Architecture 45	4
Architecture 47	4
	28

COURSE IN ARCHITECTURAL ENGINEERING.

This course is intended to prepare the graduate to enter the profession of architectural engineer, or of builder; it is also intended for young men who desire a technical education in order to fit themselves for engaging in commercial enterprises related to building construction, such as the manufacture or sale of building materials, and the erection, operation, or insurance of buildings.

VII.—COURSE IN ARCHITECTURAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of that department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Architecture 24 Elements of Design.	1
English 1 Rhetoric and Composition.	3	Drawing 2 Descriptive Geometry.	3
Mathematics 1 Solid Geometry.	3	English 1 Rhetoric and Composition.	3
Mathematics 2 Algebra.	3	Mathematics 2 Algebra.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mathematics 3 Trigonometry.	3
Physics 3 Elementary.	2	Mechanical Engineering 1 Elementary Mechanics.	2
		Physics 3 Elementary.	2
	16		17
Architecture 21	6	*Architecture* 21	6
Architecture 23	2	*Architecture* 23	2
Drawing 1	2	*Drawing* 1	2
Mechanical Engineering 13*a*	4	*Mechanical Engineering* 14*a*	4
Physics 3	2	*Physics* 3	2
	16		16

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Architecture 25 Principles of Composition.	1	Architecture 26 History of Architecture.	2
Architecture 26 History of Architecture.	2	Architecture 27 Carpentry Construction.	2
Architecture 27 Carpentry Construction.	2	English 2 Literature.	2
English 2 Literature.	2	English 3 Composition.	1
English 3 Composition.	1	History 2 English.	2
History 2 English.	2	Mathematics 5 Calculus.	6
Mathematics 4 Analytics.	6	Physics 6 Electricity and Magnetism.	2
Military Science 1 Drill Regulations.	1	Military Science 1 Drill Regulations.	1
	17		18

First Term.	Hours per week.	Second Term.	Hours per week.
Architecture 27	2	*Architecture* 27	2
Architecture 28	8	*Architecture* 28	8
Architecture 29	4	*Architecture* 29	2
		Physics 6	2
	14		14

JUNIOR YEAR.

Architecture 30 History of Architecture.	2	Architecture 36 Steel Construction.	2
Architecture 31 Masonry Construction.	2	Chemistry 1a Inorganic.	3
Architecture 34 Building Sanitation.	1	Civil Engineering 10 Masonry Construction.	3
Chemistry 1a Inorganic.	3	Civil Engineering 12 Stresses.	2
Civil Engineering 6 Mechanics of Materials.	4	English 5 Argumentation.	1
English 5 Argumentation.	1	Mechanical Engineering 3 Elementary Steam Eng.	3
		Physics 7 General.	2
	13		16

Architecture 33	6	*Architecture* 36	2
Architecture 38	4	*Architecture* 39	8
Architecture 39	8	*Chemistry* 1a	2
Chemistry 1a	2	*Civil Engineering* 12	2
Civil Engineering 6	2	*Physics* 9	2
	22		16

SENIOR YEAR.

Civil Engineering 14 Stresses.	2	Architecture 35 Heating and Ventilating.	1
Civil Engineering 18 Reinforced Concrete.	3	Architecture 41 Business Practice.	1
Economics 4 Economic Organization.	3	Civil Engineering 14 Stresses.	2
English 6 Public Speaking.	1	Chemistry 10 Geology.	4
Military Science 2	1	Economics 4 Economic Organization.	3
Mechanical Engineering 5a Steam Engines and Boilers.	2	Electrical Engineering 6 Lighting and Wiring.	1
		English 6 Public Speaking.	1
	12		13

Architecture 44	8	*Architecture* 46	16
Architecture 46	11	*Chemistry* 10	2
Civil Engineering 14	2	*Civil Engineering* 14	2
	21		20

DEPARTMENT OF ARCHITECTURE.

PROFESSOR S. J. FOUNTAIN.

Instruction in this department is based upon the use of text-books and lectures in the class room and by practice in the drafting rooms. Problems are assigned the students in design and construction similar to those they will meet in actual practice.

The Professor of Architecture is a Patron of an Atelier of the Society of Beaux-Arts Architects of New York City which gives the students an opportunity of taking problems given out by this society. These problems are given out simultaneously to all the colleges of Architecture in the United States and are then sent to New York to be judged by a jury of prominent architects and this enables students to compete directly with the students of architecture of the largest colleges and universities.

The courses are as follows:

20. Architectural Drawing. Freshman. First and second terms, 8 hours a week. Practice.

Relations of plans, elevations, and sections to each other. Architectural elements; doors, windows, mouldings; the Orders; conventional rendering.

(Required in Course IX.)

21. Architectural Drawing. Freshman. First and second terms, 6 hours a week. Practice.

The same as Course 20.

(Required in Course VII.)

22. Freehand Drawing. Freshman. First and second terms, 4 hours a week. Practice.

Charcoal and pencil drawing from geometrical objects and from the cast.

(Required in Course IX.)

23. Freehand Drawing. Freshman. First and second terms, 2 hours a week. Practice.

Charcoal and pencil drawing from geometrical objects and from the cast.

(Required in Couse VII.)

24. Elements of Design. Freshman. Second term, 1 hour a week.

Lectures on the elements of Architecture; mouldings, windows, doors, columns, walls, cornices, roofs; proper grouping and arrangements of these elements; principles of planning.

(Required in Courses VII and IX.)

25. Principles of Composition. Sophomore. First term, 1 hour a week.

Principles underlying pleasing arrangements, unity, individuality, similarity, subordination. Analysis of buildings. Primary masses, secondary masses, details, horizontal division, proportion, contrast, practical applications. Comparison and criticism.

Text: Architectural Composition, *Robinson.*

Prerequisite, *Architecture* 24.

(Required in Courses VII and IX.)

26. History of Architecture. Sophomore. First and second terms, 2 hours a week.

From the Egyptian period to the period of the Renaissance. Effects of political, economic, and geographical conditions. Influence of materials, climate and structural systems. This is supplemented by having the students make tracings from various works on the different styles of architecture.

Recitations: Illustrated lectures.

Text: A History of Architecture, *Fletcher-Fletcher.*

(Required in Courses VII and IX.)

27. Carpentry Construction. Sophomore. First and second terms, 2 hours a week; with practice.

The growth, cutting, seasoning, and working of woods. Framing, details, specifications.

Practice, 2 hours a week.

Text: Building Construction and Superintendence, Part 2, *Kidder.*

(Required in Courses VII and IX.)

28. Architectural Design. Sophomore. First and second terms, 8 hours a week. Practice.

Rendered Order problems, involving simple composition.

Prerequisite, *Architecture* 20 or 21.

(Required in Courses VII and IX.)

29. Freehand Drawing. Sophomore. First term, 4 hours, second term 2 hours a week. Practice.

Charcoal from the cast.

Prerequisite, *Architecture* 22 or 23.

(Required in Courses VII and IX.)

30. History of Architecture. Junior. First term, 2 hours a week.

From the period of the Renaissance to modern times.

Recitations: Illustrated lectures.

Text: A History of Architecture, *Fletcher-Fletcher.*

Prerequisite, *Architecture* 26.

(Required in Courses VII and IX.)

31. Masonry Construction. Junior. First term, 2 hours a week.

Materials, foundations, walls, details. Terra-cotta, fire proofing.

Recitations.

Text: Building Construction and Superintendence, Part 1, *Kidder*

(Required in Courses VII and IX.)

32. Masonry Construction. Junior. First term, 2 hours a week. Practice.

Drawing and designing details of building construction and masonry.
Text: Building Construction and Superintendence, Part 1, *Kidder*.
Must be preceded or accompanied by *Architecture* 31.
(Required in Course IX.)

33. Masonry Construction. Junior. First term, 6 hours a week. Practice.

Drawing and designing details of building construction and masonry.
Text: Building Construction and Superintendence, Part 1, *Kidder*.
Must be preceded or accompanied by *Architecture* 31.
(Required in Course VII.)

34. Building Sanitation. Junior. First term, 1 hour a week.

Lectures on water supply, drainage, sewage disposal, and plumbing for buildings.
(Required in Courses VII and IX.)

35. Heating and Ventilating. Junior. Second term, 1 hour a week.

The general principles of heating and ventilating and calculation of the sizes of heating surfaces, heaters, boilers, and steam and water pipes and air ducts.
Text: Heating and Ventilation, *Hubbard*.
(Required in Courses VII and IX.)

36. Steel Construction. Junior. Second term, 2 hours a week; with practice

Lectures on the design and construction of columns, beams, girders, and trusses. Details of steel framing. Standard connections, steel and cast iron stairs, spacing of columns.
Practice, 2 hours a week.
Prerequisite, *Civil Engineering* 6.
(Required in Courses VII and IX.)

37. Freehand Drawing. Junior. First and second terms, 4 hours a week. Practice.

Charcoal from the cast.
Prequisite, *Architecture* 29.
(Required in Course IX.)

38. Freehand Drawing. Junior. First term, 4 hours, second term, 2 hours a week. Practice.

Charcoal from the cast.
Prequisite, *Architecture* 29.
(Required in Course VII.)

39. Architectural Design. Junior. First and second terms, 8 hours a week. Practice.

Rendered plan problems and sketch problems.
Prerequisite, *Architecture* 28.
(Required in Course VII.)

39a. Architectural Design. Junior. First term, 10 hours, second term, 14 hours a week. Practice.

Rendered plan problems and sketch problems.
Prerequisite, *Architecture* 28.
(Required in Course IX.)

40. History of Ornament. Senior. First term, 2 hours a week.

Lectures on the history of ornament of the different periods.
Prerequisite, *Architecture* 30.
(Required in Course IX.)

41. Business Practice. Senior. Second term, 1 hour a week.

Lectures on the organization and management of an architect's office, and on the responsibilities of an architect to the owner, contractor, and the community at large.
(Required in Courses VII and IX.)

42. History of Sculpture and Painting. Senior. Second term, 2 hours a week.

Lectures on sculpture and painting.
Prerequisite, *Architecture* 30.
(Required in Course IX.)

43. Architectural Design. Senior. First term, 16 hours, second term, 20 hours a week. Practice.

Advanced problems in original design.
Prerequisite, *Architecture* 39.
(Required in Course IX.)

44. Architectural Design. Senior. First term, 8 hours a week. Practice.

Advanced problems in original design.
Prerequisite, *Architecture* 39.
(Required in Course VII.)

45. Building Construction. Senior. First and second terms, 4 hours a week. Practice.

Graded problems in structural design of buildings, to be executed in wood, iron, masonry, steel, or reinforced concrete.
Prerequisite, *Architecture* 27, 31, 36.
(Required in Course IX.)

46. Building Construction. Senior. First term, 8 hours, second term 20 hours a week. Practice.

Graded problems in structural design of buildings, to be executed in wood, iron, masonry, steel, or reinforced concrete.

Prerequisite, *Architecture* 27, 31, 36.

(Required in Course VII.)

47. Freehand Drawing. Senior. First and second terms, 4 hours a week. Practice.

Advanced charcoal drawing from the cast and from life.

Prerequisite, *Architecture* 37.

(Required in Course IX.)

COURSE IN CHEMICAL ENGINEERING.

This course is designed to prepare young men for technical work in those industries in which raw materials undergo a chemical change in the process of manufacture. Many such industries important to the present and future development of this State are those dealing with cottonseed products, sugar, leather, petroleum, cement, ceramics and iron and steel. The analytical chemistry given in the course is sufficient to enable the graduate to engage in the work of a commercial analyst or to enter an industrial plant as a control chemist. The control chemist repeatedly analyzes and evaluates the raw materials used in the manufacture as well as the intermediate and finished products. It is through such control that manufactures of this kind have been made scientific. Pure food laws and other legal enactments calculated to protect the people against fraud have, of late years, greatly accentuated the importance of this work. At the same time enough work is given in general engineering practice to enable the graduate who enters the works as a control chemist to come in time to a full understanding and mastery of the industry in which he is engaged.

The fifth year's work, leading to the degree of chemical engineer, is designed to facilitate the transformation of the control chemist into the manager of an industrial plant, capable of adapting chemical processes to varying conditions and improving upon them as occasion demands.

VIII.—COURSE IN CHEMICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechancial Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 1 Inorganic.	3	Chemistry 1 Inorganic.	3
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
History 2 English.	2	History 2 English.	2
Mathematics 4 Analytics.	6	Mathematics 5 Calculus.	6
Military Science 1 Drill Regulations.	1	Military Science 1 Drill Regulations.	1
Physics 4 General.	3	Physics 4 General.	3
	18		18
Chemistry 1	4	*Chemistry* 1	4
Drawing 33	2	*Drawing* 6	4
Drawing 6	2		
Physics 4	2	*Physics* 4	2
	10		10

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemical Engineering 1 Industrial Chemistry.	3	Chemical Engineering 3 Metallurgy.	3
Chemistry 4 Organic.	2	Chemistry 4 Organic.	2
Chemistry 5 Economic Geology.	2	Civil Engineering 6a Mechanics of Materials.	2
Civil Engineering 7 Hydraulics.	2	Civil Engineering 7 Hydraulics.	2
English 5 Argumentation.	1	English 5 Argumentation.	1
Mathematics 6 Practical.	2	Electrical Engineering 5 Electrical Machinery.	4
Mechanical Engineering 3 Elementary Steam Engineering.	3	Mechanical Engineering 4 Kinematics.	3
	15		17

Chemistry 4	2	*Chemistry* 4	2
Chemical Engineering 2	4	*Chemical Engineering* 4	4
Chemistry 5	2	*Civil Engineering* 6*a*	2
Mechanical Engineering 15	4	*Electrical Engineering* 5	2
	12		10

SENIOR YEAR.

Chemical Engineering 5 Physical Chemistry.	3	Chemical Engineering 5 Physical Chemistry.	3
Chemical Engineering 6 Technical Analysis.	2	Chemical Engineering 6 Technical Analysis.	2
Civil Engineering 15 Water Supply Engineering.	2	Chemistry 11 History of Chemistry.	1
Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Mechanical Engineering 5 Steam Engines and Boilers.	3	Mechanical Engineering 5 Steam Engines and Boilers.	3
Mechanical Engineering 6 Eng. Mechanics.	2	Mechanical Engineering 6 Eng. Mechanics.	2
Military Science 2	1		
	17		15

Chemical Engineering 5	2	*Chemical Engineering* 5	2
Chemical Engineering 6	6	*Chemical Engineering* 6	6
Mechanical Engineering 22*a*	2	*Mechanical Engineering* 22*a*	2
	10		10

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

CHEMICAL ENGINEERING.

PROFESSOR BLAKE, MR. NELSON, MR. THORNTON.

The beginning work of the Course in Chemical Engineering is described under the Department of Chemistry, page 132. Chemistry and Chemical Engineering today cover such a broad field that in the Senior year students are advised to specialize in some branch of technical analysis such as the chemical control of a cement plant or of a cottonseed plant. All the work is supplemented by laboratory work. The chemical industries most highly developed in this State are inspected from time to time.

The courses in Chemical Engineering are as follows:

1. Industrial Chemistry. Junior. First term, 3 hours a week.

This is an introductory course, covering the principal applications of chemical processes to commercial products, mostly organic in nature, such as gas manufacture, petroleum products, soaps, the starch and sugar industries, and the manufacture of paper, leather and explosives. The manufacture of fertilizers, cement and ceramics is also considered.

Text: Industrial Chemistry, *Rogers and Aubert.*

Prerequisite, *Chemistry* 1.

(Required in Course VIII.)

2. Quantitative Analysis. Junior. First term, 4 hours a week. Practice.

This course serves as an introduction to the methods of exact analysis, typical inorganic substances being used, such as iron, sulphuric acid, silver and chlorine. The work is at first gravimetric, then volumetric.

Text: Quantitative Chemical Analysis, *Foulk.*

Prerequisite, *Chemistry* 2.

(Required in Course VIII.)

3. Metallurgy of Iron and Steel. Junior. Second term, 3 hours a week.

In this course the metallurgy of iron and the manufacture of steel are considered in detail, especial attention being given to the nature and location of valuable iron ore deposits, together with suitable fluxes; to the nature and availability of proper fuels, together with the furnaces used; to the constitution of the resulting pig iron and the manufacture of steel therefrom; and finally to the chemistry of the different kinds of steel and their adaptability in engineering practice. Lectures and recitations.

Text: The Metallurgy of Iron and Steel, *Stoughton.*

Prerequisite, *Chemistry* 1.

(Required in Courses III and VIII.)

4. Silicate Analysis. Junior. Second term, 4 hours a week. Practice.

A silicate is to be analyzed for all its constituents until checking duplicate determinations are obtained.

Text: The Analysis of Silicate and Carbonate Rocks, *Hillebrand.*
Prerequisite, *Chemical Engineering* 2.
(Required in Course VIII.)

5. Physical Chemistry. Senior. First and second terms, 3 hours a week; with practice.

This course presents, wherever known, physical explanations of chemical and allied phenomena, together with a mathematical exposition of the laws involved. Some of the subjects thus developed are the atomic theory, the periodic law, solubility, fusion, vaporization, the phase rule, dissociation in solution, chemical equilibrium, and relative chemical activity. It leads up to a consideration of the best research work of today. Most of the theoretical conclusions deduced in the class room are confirmed in the laboratory. Lectures and recitations.

Practice, 2 hours a week.
Prerequisite, *Chemical Engineering* 3; *Mathematics* 4.
(Required in Course VIII.)

6. Technical Analysis. Senior. First and second terms, 2 hours a week; with practice.

This course consists of lectures and conferences with regard to technical methods of analysis, especially in exercising chemical control over industrial plants, such as cement manufacturing, the cottonseed oil industry, and the sugar industry. After studying various methods in general, the student will take up some one system of chemical control and master it, so that he might creditably enter the works as a control chemist in his chosen line.

The nature of this work is inadequately represented by the time alloted to it. The methods of exact analysis require an intelligent, painstaking supervision not limited by time allotments. The degree to which this fact is appreciated by the student determines his value as an analyst. The technical journals and official methods will frequently be consulted by the student.

Practice, 6 hours a week.
Prerequisite, *Chemical Engineering* 4.
(Required in Course VIII.)

11. Advanced Industrial Chemistry. Fifth Year. First and second terms; 2 hours a week; with practice.

This course consists of lectures and conferences with regard to methods and problems in industrial chemistry. The efficiency of processes and plants, the advisability of replacing old processes by new, the evaluation of rocks, clays, coals and petroleum, the economic and commercial aspects of particular cases, with particular reference to the future development of the chemical industries in this State, all receive attention.

Practice, 12 hours a week.

The practice in this course consists in conducting experiments related to the chemical industries, on a scale affording, as nearly as equipment will allow, the conditions obtaining in the works, with a view of ascertaining the active factors in the different processes and the effect of varying them; also a detailed study of the status of the different industries in this State.

Prerequisite, *Chemical Engineering* 4.

(Required in Course VIII.)

12. Chemistry of the Rarer Elements. Fifth Year. First term, 2 hours a week; with practice.

In this course most of the rarer elements are prepared from their ores and identified. Those of industrial importance, such as tungsten, cerium and thorium, as well as gold and platinum, receive most attention.

Practice, 4 hours a week.

(Required in Course VIII.)

13. Chemical Preparations. Fifth Year. Second term, 2 hours a week; with practice.

In this course purely chemical industries which are not carried out on the largest scale receive attention. These consist, for the most part, of the manufacture of chemicals and drugs.

Practice, 4 hours a week.

(Required in Course VIII.)

EQUIPMENT.

Besides the equipment described under the Department of Chemistry, this department is provided with a separate room for technical anlysis and one for advanced industrial chemistry. The latter is not yet fully equipped. The former is provided with vacuum and compressed air systems, colorimeters, calorimeters, refractometers, Lovibond tintometer, combustion furnaces, gas burettes and other special apparatus used in technical analysis. The laboratory has the usual equipment for work in physical chemistry.

COURSE IN CIVIL ENGINEERING.

This course has for its object the preparation of young men for entrance upon professional practice in the fields of surveying; highway construction and maintenance; municipal engineering as related to street location, paving, water supply, sewerage, sewage disposal works, street railways, etc.; railway location, construction and maintenance; the construction of levees and other protection works to guard against damage by overflows; irrigation and drainage engineering; the construction of canals, reservoirs, the installation of pumping plants, filtration works, etc.; the design and construction of bridges, steel buildings, and masonry structures. Attention is given to drafting so that the student may be prepared to represent his designs on paper; to the preparation of contracts, specifications and estimates of cost, and to the supervision of work, etc. A thorough grounding in the underlying principles of engineering is given, together with the application of these principles to as many special lines as time will permit.

In the Division of Highway and Rural Engineering the Department of Civil Engineering is meeting a constantly increasing demand along lines of great importance to the State. In addition to conducting classes in road building, and in street paving and improvement, the Professor of Highway Engineering delivers lectures and gives advice on highway matters all over the State to as full extent as his time and other duties permit. The Instructor in Terracing gives instruction in farm terracing and the conservation of soil moisture to classes at the College for one-half the scholastic year, the remainder of his time being devoted to co-operative work with Farmers' Institutes and individual farmers. Free lectures and demonstrations of terracing work are made on request at any point in the State. Exhibits for instruction in highway engineering, and in terracing, are shown at the leading fairs and on demonstration trains for the purpose of giving as many people as possible an opportunity to become familiar with approved methods in these lines. The Professor of Highway Engineering or the Instructor in Terracing, and sometimes both, will be present wherever these exhibits are shown to explain the models and to explain present practice.

The fifth year course, leading to the degree of Civil Engineer (C. E.), offers opportunity for more advanced study in some of the branches of Civil Engineering than can be had within the limit of the four-year course, and includes some elective work in subjects offered in departments other than that of Civil Engineering. Every student who can afford the time and money is urged to follow his four-year course, when possible, with the more technical course covered by the fifth year's work.

IV.—COURSE IN CIVIL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Civil Engineering 1 Surveying, Leveling and Topography.	3	Civil Engineering 4 Railroads.	3
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
History 2 English.	2	History 2 English.	2
Mathematics 4 Analytics.	6	Mathematics 5 Calculus.	6
Military Science 1 Drill Regulations.	1	Military Science 1 Drill Regulations.	1
Physics 4 General.	3	Physics 4 General.	3
	18		18
Civil Engineering 1	4	*Civil Engineering* 4	4
Drawing 33	2		
Drawing 6	2	*Drawing* 6	4
Physics 4	2	*Physics* 4	2
	10		10

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hour. per weeks
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
Civil Engineering 5 Railroads.	2	Civil Engineering 7 Hydraulics.	2
Civil Engineering 6 Mechanics of Materials.	4	Civil Engineering 9 Roads.	2
Civil Engineering 7 Hydraulics.	2	Civil Engineering 10 Masonry Construction.	3
English 5 Argumentation.	1	Civil Engineering 11 Roofs and Bridges.	2
Mathematics 6 Practical.	2	English 5 Argumentation.	1
Mechanical Engineering 3 Elementary Steam Engineering.	3	Electrical Engineering 5 Electrical Machinery.	4
	17		17
Chemistry 1*a*	2	*Chemistry* 1*a*	2
Civil Engineering 5	3		
Civil Engineering 6	2	*Civil Engineering* 7	2
Drawing 9	2	*Civil Engineering* 8	4
Mechanical Engineering 22*a*	2	*Electrical Engineering* 5	2
	11		10

Summer Practice, Civil Engineering 24.......3 weeks.

SENIOR YEAR.

Civil Engineering 13 Roofs and Bridges.	4	Civil Engineering 20 Sewerage.	2
Civil Engineering 15 Water Supply Engineering.	2	Civil Engineering 21 Least Squares and Geodesy.	3
Civil Engineering 16 Contracts and Specifications.	2	Civil Engineering 22 Higher Structures.	3
Civil Engineering 17 Irrigation and Drainage.	2	Economics 4 Economic Organization.	3
Civil Engineering 18 Reinforced Concrete.	2	English 6 Public Speaking.	1
Economics 4 Economic Organization.	3	Chemistry 10 Geology.	4
English 6 Public Speaking.	1		
Military Science 2	1		
	17		16
Civil Engineering 13	8	*Civil Engineering* 13	4
Civil Engineering 19	2	*Civil Engineering* 19	2
		Civil Engineering 22	2
		Chemistry 10	2
	10		10

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR NAGLE, PROFESSOR SPENCE, PROFESSOR POTTS, ASSOCIATE PROFESSOR RICHEY, ASSISTANT PROFESSOR CROCKETT, MR. WINDROW, MR. PEARCE.

Instruction in this department is based upon the use of good textbooks, supplemented by lectures or explanations in the class room and by practice in the field and testing laboratories, and in the drafting room. Many problems are assigned to the student in order that the underlying principles involved in their solution may be more thoroughly impressed upon him. Effort is made to develop appreciation of the degree of precision required in different kinds of work, and of the conditions under which approximate methods are desirable or admissible. Throughout the instruction work in this department a thorough understanding of the basic principles involved in a few fundamental engineering subjects is preferred to a more superficial introduction to many different subjects.

The courses are as follows:

1. Surveying, Leveling, and Topography. Sophomore. First term, 3 hours a week; with practice.

Description of the use and adjustment of the compass, transit, level and minor surveying instruments is followed by instruction in methods of field work, balancing surveys, computation of areas; profile leveling as applied to street grades, sewers, and ditches; topographic leveling with especial reference to problems in grading, farm terracing, drainage and irrigation; plotting and map drawing.

Text: Theory and Practice of Surveying, *Johnson.*

Practice, 4 hours a week.

Students are required to become thoroughly familiar with the construction, adjustment and use of the ordinary instruments; to perform field work, fully illustrating all points covered in the theory, and to make all calculations, and to prepare maps of the work done in the field.

Prerequisite, *Mathematics* 3.

(Required in Course IV.)

2. Surveying, Leveling, and Terracing. Junior. First term, 3 hours a week; with practice.

In addition to the general principles of surveying, this course will give special attention to the application of these principles to agricultural problems. It is especially planned for those who wish to take up the questions of farm surveys, terracing, drainage, and irrigation. All the time possible will be devoted to such questions as the preservation of soil fertility and moisture on hill sides; drainage of low and swampy lands; principles and methods of irrigation. The text will be liberally supplemented by lectures and by the use of bulletins.

Text: Plane Surveying, *Barton.*

Practice, 4 hours a week.

The practice will follow the lines indicated by the theory. After the use of the instruments and the general methods of field work have been taught, special attention will be given to topographic leveling of a given area, preparation of contour map from original notes, designing a system of terraces for the area surveyed; similar problems for areas to be drained or irrigated, laying out of ditches and determining proper grade lines for them.

(Optional in Couse I, Groups A, B.)

3. Surveying and Leveling. Sophomore. Second term, 2 hours a week; with practice.

This course is the same as course 1 with regard to the instruments and their uses. After the fundamental principles of surveying have been covered, special attention is paid to building and lot surveys, laying out plats, foundations, etc.

Text: Plane Surveying, *Barton.*

Practice, 2 hours a week.

The use of the instruments; field and drafting room work along the lines indicated in the theory.

Prerequisite, *Mathematics* 3.

(Required in Courses V, VII, IX.)

4. Railroad Engineering. Sophomore. Second term, 3 hours a week; with practice.

Reconnoisance, preliminary and location surveys are discussed in the class room, with problems involving simple and compound curves. Transition curves and construction work are treated in the latter part of the course.

Text: Field Manual for Railroad Engineers, *Nagle.*

Practice, 4 hours a week.

In the second term of the Sophomore year problems in simple, compound, and transition curves are assigned, and the curves run in the field. In the first term of the Junior year preliminary and location surveys are made, grade lines laid and slope stakes set. Quantities are afterwards computed from the notes.

Prerequisite, *Civil Engineering* 1.

(Required in Course IV.)

5. Railroad Engineering. Junior. First term, 2 hours a week; with practice

A continuation of course 4.

Practice, 3 hours a week.

Prerequisite, *Civil Engineering* 4.

(Required in Course IV.)

6. Mechanics of Materials. Junior. First term, 4 hours a week; with practice.

This course covers a treatment of the resistance of materials and the mechanics of beams, columns, shafts, etc.

Text: Mechanics of Materials, *Merriman.*

Practice, 2 hours a week.

Determination of the strength of materials in the testing laboratory.

Various tests of timbers, steel, cement, etc., must be made by the student and reports submitted showing results.
Prerequisite, *Mathematics* 5.
(Required in Courses III, IV, V, VII, IX.)

6a. Mechanics of Materials. Junior. Second term, 2 hours a week; with practice.

An abbreviation of course 6.
Text: Mechanics of Materials, *Merriman.*
Practice, 2 hours a week.
Prerequisite, *Mathematics* 5.
(Required in Course VIII.)

7. Hydraulics. Junior. First and second terms, 2 hours a week; with practice

The laws governing water at rest and in motion, as related to engineering problems, are discussed in this course.
Text: Treatise on Hydraulics, *Merriman.*
Practice, second term, 2 hours a week.
Calibration of nozzles, water meters, weirs, pressure gauges; efficiency tests on pumps, impulse motors, hydraulic rams, etc.
Prequisite, *Mathematics* 5.
(Required in Course IV; without practice in Course VIII.)

8. Graphics. Junior. Second term, 4 hours a week. Practice.

Elements of Graphic Statics. Use of the force and equilibrium polygons. Determination of centers of gravity and moments of inertia of areas. Stress diagrams.
Text: Roofs and Bridges, Part II, *Merriman and Jacoby.*
(Required in Course IV.)

9. Roads and Pavements. Junior. Second term, 2 hours a week.

This course covers a general elementary study of the subject of country roads and city pavements; character of materials and types of construction of different parts of the State and of the United States; the location and drainage of roads; road maintenance; road laws of Texas and other States; road finances, organization and supervision. The text is supplemented by lectures, the use of bulletins, road machinery, models and samples of materials.
Text: Art of Road Making, *Frost.*
Prerequisite, *Civil Engineering* 1.
(Required in Course IV.)

10. Masonry Construction. Junior. Second term, 3 hours a week.

The principles of masonry construction in general, except as applied to reinforced concrete, are covered in this course.
Text: Treatise on Masonry Construction, *Baker.*
Prerequisite, *Civil Engineering* 6.
(Required in Course IV.)

11. Roofs and Bridges. Junior. Second term, 2 hours a week.

The stresses in ordinary roofs and bridges and the design of simple trusses. Each student must determine the stresses due to given loads in various structures by algebraic and by graphic methods, and afterwards make necessary designs and drawings.

Text: Roofs and Bridges, Part I, *Merriman and Jacoby.*
Prequisite, *Mathematics* 5; *Civil Engineering* 6, first term.
(Required in Course IV.)

12. Stesses. Junior. Second term, 2 hours a week; with practice.

Stresses in simple structures.
Text: Roofs and Bridges, Parts I and II, *Merriman and Jacoby.*
Practice, 2 hours a week.
(Required in Courses III, VII, IX.)

13. Roofs and Bridges. Senior. First term, 4 hours a week; with practice.

A continuation of course 11.
Text: Roofs and Bridges, Parts I and III, *Merriman and Jacoby.*
Practice, first term, 8 hours; second term, 4 hours a week.
Prerequisite, *Civil Engineering* 11.
(Required in Course IV.)

14. Stresses. Senior. First term, 2 hours a week; with practice.

A continuation of course 12.
Text: Roofs and Bridges, Parts I and II, *Merriman and Jacoby.*
Practice, 2 hours a week.
Prerequisite, *Civil Engineering* 12.
(Required in Courses VII, IX.)

15. Water Supply Engineering. Senior. First term, 2 hours a week.

In this course questions concerning the collection, storage, pumping, purification and distribution of water for domestic purposes are discussed.

Text: Water Supply Engineering, *Folwell.*
Prerequisite, *Civil Engineering* 6.
(Required in Courses IV, VIII.)

16. Contracts and Specifications. Senior. First term, 2 hours a week.

This course covers discussions of the principles involved in contract making from the engineer's standpoint, with examples of general and special clauses used in engineering specifications.

Text: Engineering Contracts and Specifications, *Johnson.*
(Required in Courses IV, V.)

17. Irrigation and Drainage. Senior. First term, 2 hours a week.

Hydraulic principles are applied in the course, and the methods of collecting and distributing water to lands under irrigation are discussed. Existing irrigation systems and methods are reviewed.

Text: Manual of Irrigation Engineering, *Wilson.*
Prerequisite, *Civil Engineering* 6.
(Required in Course IV.)

18. Reinforced Concrete. Senior. First term, 2 hours a week.

The theories of stress distribution, and various systems of reinforcement employed in the construction of beams, columns, arches, etc., are discussed, and illustrative examples studied.
Text: Principles of Reinforced Concrete Construction. *Turneaure and Maurer.*
Prerequisite, *Civil Engineering* 10.
(Required in Course IV.)

19. Field and Laboratory Work. Senior. First and second terms, 2 hours a week. Practice.

Practice in the field, drafting room and laboratory.
Prerequisite, *Civil Engineering* 4, 6.
(Required in Course IV.)

20. Sewerage. Senior. Second term, 2 hours a week.

Questions relating to the best methods of draining and sewering cities, and to the disposal of the sewage, receive attention in this course.
Text: Sewerage, *Folwell.*
Prerequisite, *Civil Engineering* 6.
(Required in Course IV.)

21. Least Squares and Geodesy. Senior. Second term, 3 hours a week.

Recitations, supplemented by field work on base line measurements, triangulation, etc., as available time will permit.
Practice will be covered in *Civil Engineering* 19.
Texts: Least Squares. *Merriman.*
Geodesy, *Merriman.*
Prerequisite, *Mathematics* 5.
(Required in Course IV.)

22. Higher Structures. Senior. Second term, 3 hours a week; with practice.

The determination of stress in swing, cantilever, and suspension bridges, and in arches.
Text: Roofs and Bridges, Part IV, *Merriman and Jacoby.*
Practice, 2 hours a week.
Prerequisite, *Civil Engineering* 13.
(Required in Course IV.)

23. Higher Structures. Senior. Second term, 2 hours a week; with practice.

The determination of stresses in arches and domes.
Text to be assigned.
Practice, 2 hours a week.
The complete design of an arch rib.
Prerequisite, *Civil Engineering* 14.
(Required in Course VII.)

24. Field Practice. Summer following the Junior Year.

A summer practice course of at least three weeks duration will be required of all students who have completed the work of their junior year. At the close of the session of 1913-1914 this course will begin on Thursday, June 11th, and close on Friday, July 3, 1914, both dates included. Students in this course will occupy rooms in the dormitories and will take their meals at the Mess Hall. Board, room, lights and janitor service will be charged for at the rate $4.90 per week. For the present there will be no laboratory fee.

The class will be divided into squads and each squad will be required to put in the full working day and to complete exercises assigned in railroad and topographic surveying, triangulation, river gaugings, and such other exercises as time will permit.

(Required in Course IV.)

FIFTH YEAR.

31. Astronomy. First term, 2 hours a week.

This course is given in the fifth year for students receiving their Bachelor's degree prior to June, 1914. It embraces recitations and such field observations as the equipment and time available will permit.

Text: General Astronomy, *Young*.

(Required in Course IV.)

32. General Civil Engineering. First and second terms, 2 hours a week.

For fifth-year students receiving their Bachelor's degree prior to June, 1914. The subject offered will conform to the character of instruction best fitted for particular cases.

(Required in Course IV.)

SHORT WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY SURVEYORS.

The Department of Civil Engineering will, during the session 1913-14, offer a short course for public road supervisors, road overseers, county surveyors, and others interested in such work. This course will be open only to men over twenty-one years of age. No entrance examinations will be required, but it will be necessary for applicants to have a thorough working knowledge of arithmetic in order to carry the work to be given.

The course will cover the description and use of the transit, level, compass, and other simple surveying instruments; the elementary principles of land surveying: profile and topographic leveling and establishing grade lines for roads and ditches; the elementary principles of road location, grading, drainage, surfacing, and culverts; and the economic and social benefits of road improvement. The students will be divided into two classes, those having only a knowledge of arithmetic forming the first class, and those having a knowledge of algebra and trigonometry forming the advanced class. Regular lessons will be assigned in the text-books for daily recitations. Lectures will also be given by the Faculty and by prominent engineers in the State. Much practice work will be required in the field and in the drafting room. Road models will be studied and samples of road materials will be classified.

This course is designed exclusively for practical road men and surveyors who have never had college training. No college credit will be given for the course and no certificates of proficiency will be issued.

The course will begin Monday, January 12, 1914, and end Saturday, February 7, 1914. Rooms will be charged for at the rate of $1.00 per week to cover cost of light, heat, and janitor service. Meals will be furnished at the Mess Hall at twenty-five cents each, or $4.00 per week.

All students must register at the office of the Dean.

EQUIPMENT.

The department occupies a portion of the Civil Engineering Building and has three recitation rooms, two drafting rooms, library room, and three offices on the second floor. In the basement, the department has an instrument room, a general testing room, a hydraulic and road materials laboratory, a cement laboratory, a model room and store room.

For the field work the equipment consists of a well assorted lot of transits and engineer's levels for general work, also for more precise work in city surveying and leveling and for simple triangulation. Also surveyor's compasses, terracing levels, plane tables, aneroid barometers, range poles, rods, chains, chain tapes, metallic tapes, surveyor's pins, axes, etc. For the drafting room and other office work there are drawing tables, reckoning machines, a universal drafting machine, planimeters, slide rules, calculating instruments, protractors for general and special uses, and a sufficient supply of T squares, triangles, etc.

In the general testing laboratory there is one machine of 100,000, one of 50,000 and one of 20,000 pounds capacity, a 50,000 inch-pounds torsion machine and a rumbler for testing paving brick. With the exception of the 20,000 pound machine these are all power driven from the same jack shaft. The hydraulic and road testing laboratory contains weirs, pressure gauges, hook gauges, water meters, measuring tanks, impulse wheels, hydraulic ram, centrifugal pumps, pitot tubes, current meter, nozzles and other apparatus for hydraulic measurements. Also various machines for testing the hardness, wearing qualities, cementing values, etc., of materials suitable for road building. In the cement laboratory are moulds for shaping briquettes for tension tests, moulds for compression tests, cement testing-machines, sieves for testing the fineness of cement and sand, Vicat and Gillmore's needles for testing time of setting, damp closet, balances, pans and other appliances used in testing the qualities of cements.

A road exhibit room is also maintained for the benefit of students and visitors. In this room are shown models of road sections and surfaces made of various materials available in Texas. Samples of gravel, rock, asphalt, and road soils, together with photographs, charts and maps of road work in the State complete the exhibit.

The department library and reading room contains engineering books, periodicals, blue prints, photographs, etc., and is kept constantly open for the use of students during the session.

COURSE IN ELECTRICAL ENGINEERING.

The course is electrical engineering is designed to give the student a working knowledge of general electric engineering, and to fit him for professional work in the various branches of applied electricity.

The rapidly increasing number of electrical plants and circuits for power transmission, lighting, transportation, telephoning, and telegraphing demands men who are prepared to design, construct and operate them. The studies in the course outlined have been carefully selected with this demand in view.

At some time during the course students are given an opportunity to make a tour of inspection of some of the larger plants of the State.

A branch of the American Institute of Electrical Engineering has been organized among the students and affords the means of keeping students in touch with the latest development in the electrical field.

The foundation for the course in Electrical Engineering is laid in the departments of physics, mathematics and mechanical engineering.

V.—COURSE IN ELECTRICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Electrical Engineering 1 Electricity and Magnetism.	6	Electrical Engineering 2 Electrical Measurements.	2
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
History 2 English.	2	History 2 English.	2
Mathematics 4 Analytics.	6	Mathematics 5 Calculus.	6
Military Science 1 Drill Regulations.	1	Military Science 1 Drill Regulations.	1
		Physics 7 Heat.	2
		Physics 8 Mechanics.	2
	18		18
Drawing 6	2	*Electrical Engineering* 2	4
Drawing 33	2	*Drawing* 6	4
Mechanical Engineering 15*a*	2	*Physics* 9	2
Electrical Engineering 1	4		
	10		10

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
Civil Engineering 6 Mechanics of Materials.	4	Civil Engineering 3 Surveying and Leveling.	2
Electrical Engineering 3 Direct Currents.	3	Electrical Engineering 3 Direct Currents.	2
		Electrical Engineering 4 Electric Lighting.	1
		English 5 Argumentation.	1
English 5 Argumentation.	1	Electrical Engineering 12 Telephone Engineering.	2
Mathematics 6 Practical.	2	Electrical Engineering 13 El. Al. Currents.	2
Mechanical Engineering 3 Elementary Steam Engineering.	3	Mechanical Engineering 4 Kinematics.	3
	16		16
Chemistry 1a	2	*Chemistry* 1a	2
Civil Engineering 6	2	*Electrical Engineering* 3	4
Electrical Engineering 3	4	*Electrical Engineering* 12	2
Mechanical Engineering 19*a*	2	*Civil Engineering* 3	2
	10		10

SENIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Electrical Engineering 8 Alternating Currents.	3	Electrical Engineering 8 Alternating Currents.	3
Electrical Engineering 9 Electrical Machine Design.	3	Electrical Engineering 9 Electrical Machine Design.	3
Electrical Engineering 10 Electric Railways.	2	Electrical Engineering 10 Electric Railways.	2
Civil Engineering 16 Contracts and Specifications.	2	Electrical Engineering 11 Electric Power Distribution.	2
Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Mechanical Engineering 5a Steam Engines and Boilers.	2	Mechanical Engineering 5a Steam Engines and Boilers.	2
Military Science 2	1		
	17		16
Electrical Engineering 8	4	*Electrical Engineering* 8	4
Electrical Engineering 9	4	*Electrical Engineering* 9	4
Mechanical Engineering 22*a*	2	*Mechanical Engineering* 22*a*	2
	10		10

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR BOLTON, ASSOCIATE PROFESSOR LEAR, ASSISTANT PROFESSOR WOOTEN, MR. GUMAER.

Instruction in Electrical Engineering is given by recitation, lecture experiment, lantern illustration, laboratory exercises, and individual conference. In most courses, some modern text-book is taken as a basis for study and the work broadened and explained by lectures and problems.

The laboratory practice is designed more firmly to impress the principles taught in class room, to familiarize the student with the practical operation of electrical apparatus, and to teach him to investigate for himself the characteristics of various types of machines. Reports are required on all experiments performed and the student learns to express thoughts concisely.

The courses are as follows:

1. Electricity and Magnetism. Sophomore. First term, 6 hours a week; with practice.

Lectures, recitations and problems in electricity and magnetism.

Prerequisite, *Physics* 3.

Practice, 4 hours a week.

This includes a laboratory investigation of the phenomena studied in the text-book.

(Required in Course V.)

2. Electrical Measurements. Sophomore. Second term, 2 hours a week; with practice.

Lectures and recitations on the theory, standardization and use of electrical measuring instruments, including galvanometers, bridges, voltmeters, ammeters. condensers, wattmeters, and recording instruments.

Prerequisite, *Electrical Engineering* 1, *Mathematics* 2, 3. Must be accompanied by *Mathematics* 5.

Practice, 4 hours a week.

This practice is intended to clarify the ideas received by the student in the class room. It includes the accurate measurements of various electrical quantities, such as resistance, inductance, capacity, and the effect of temperance, position, etc., on these quantities; a study of the various types of batteries to determine their adaptability to various uses; calibration and repair of instruments, such ammeters. voltmeters, wattmeters.

(Required in Course V.)

3. Direct Currents. Junior. First term, 3 hours, second term, 2 hours a week; with practice.

This course is devoted to the study of the theory and applications of direct currents and direct current machinery. Attention is given to modern machinery and its application. A short time is devoted to the study of the National Electric Code and modern methods of wiring.

Text: Elements of Electrical Engineering, volume I, *Franklin and Esty.*

Practice, 4 hours a week.

The practice is intended to give practical demonstration of the theory. It includes the operation of dynamos and motors, the determination of characteristics, measurements and calculation of losses, efficiencies, and regulation. A practical study is also made of the various types of modern illuminants to determine reliability, efficiency, adaptability to various uses, etc.

Prerequisite, *Electrical Engineering* 2, *Mathematics* 5.

(Required in Course V.)

4. Electric Lighting. Junior. Second term, 1 hour a week.

Lectures and recitations on electric lighting units and illumination.

Prerequisite, *Electrical Engineering* 1.

(Required in Course V.)

5. Electrical Machinery. Junior. Second term, 4 hours a week; with practice.

Lectures and recitations on the operation and characteristics of dynamos, motors, transformers and other electrical appliances of the types most commonly met with in general engineering practice. This course is intended to give only a general idea of the subject. The course is intensely practical, only the more fundamental principles being studied in detail.

Practice, 2 hours a week.

The practice is designed to give the general engineering student some degree of familiarity with the operation and the more important charactristics of both direct current and alternating current machines.

Prequisite, *Physics* 4, *Mathematics* 4.

(Required in Courses III, IV, VI, VIII.)

6. Lighting and Wiring. Junior. Second term, 1 hour a week.

Lectures and recitations on wiring for electric lighting. This includes a study of the National Electric Code of wiring with illustrations of how its requirements are carried out in practice. It is given to enable the architectural students to design and supervise wiring installations.

Prerequisite, *Physics* 4.

(Required in Courses VII, IX.)

8. Alternating Currents. Senior. First and second terms, 3 hours a week; with practice.

This course embraces a study of alternating currents and alternating current machinery, including methods of generation, transformation and use; a study of wave shapes and quantities affecting wave shapes; and the effect of balanced and unbalanced loads.

The subject is treated graphically as far as possible, the text being supplemented by lectures and problems.

Text: Elements of Electrical Engineering, volume II, *Franklin and Esty.*

Practice, 4 hours a week.

The practical operation and determination of the characteristics of various types of alternating current machines.

Prerequisite, *Electrical Engineering* 3, 13.

(Required in Course V.)

9. Electrical Machine Design. Senior. First and second terms, 3 hours a week; with practice.

Lectures and recitations on the design of electrical instruments and machines.

Practice, 4 hours a week.

Practice in the design of lifting magnets, clutches, relays, dynamos and motors. Working drawings of some of the machines are required. Some time is devoted to the design of an electric power plant and distribution system. This includes bills of material, estimate of costs, etc.

Prerequisite, *Electrical Engineering* 3; to be accompanied or preceded by *Electrical Engineering* 8.

(Required in Course V.)

10. Electrical Railways. Senior. First and second terms, 2 hours a week.

This course embraces a study of direct current railway apparatus, costs of construction and operation of electric railway systems, and operation methods. Students are required to make an engineering report on a small railway system, estimating cost of construction and operation and probable returns on investment.

Prerequisite, *Electrical Engineering* 3.

(Required in Course V.)

11. Electric Power Distribution. Senior. Second term, 2 hours a week.

Lectures and recitations on the transmission and distribution of power by electrical methods. Many subjects not treated in the textbooks are studied and the student is encouraged to investigate all available sources for information.

This course must be accompanied or preceded by *Electrical Engineering* 3 and 8.

(Required in Course V.)

12. Telephone Engineering. Junior. Second term, 2 hours a week; with practice.

Lectures and recitations on telephone systems; their design, installation and management. This course includes a discussion of the relative advantages of the different types of telephones, and the faults and peculiarities met in each system.

Practice, 2 hours a week.

Practice in tracing of circuits, connection of instruments, measurement of constants, and location and remedy of faults and trouble in magneto, central energy and automatic telephone sets and systems.

Prerequisite, *Electrical Engineering* 2; to be preceded or accompanied by *Electrical Engineering* 3, 13.

(Required in Course V.)

13. Elementary Alternating Currents. Junior. Second term, 2 hours a week.

Lectures and recitations on the fundamental principles of alternating currents.

Prerequisite, *Electrical Engineering* 2.

(Required in Course V.)

FIFTH YEAR.

The following courses are offered in the fifth year for students receiving their Bachelor's degree prior to 1914:

(5.) Electrical Machine Design. First term, 3 hours a week; with practice.

Lectures, recitations and calculations on the design of electrical instruments and machines.

Practice, 4 hours a week.

Most of this work is done on the drawing board. It includes the making of detail drawings of the machines designed by the student, and the design of a city power plant.

(6.) Advanced Electrical Machinery. First and second terms, 3 hours a week; with practice.

Lectures and recitations on advanced alternating current work. This course deals with the more complicated instruments and machines such as are used for alternating currents.

Practice, first term, 4 hours; second term, 2 hours a week.

This is a continuation of the Senior work in testing alternating current machinery.

(12.) Electric Power Distribution. First term, 3 hours a week.

Lectures and recitations on the distribution of electrical power. The calculation and design of a long distance transmission line is required of each student.

(13.) Power Plant Design. Second term, 3 hours a week; with practice.

Lectures on the design and operating characteristics of modern power plants and distributing systems.

Practice, 2 hours a week.

Making of diagrams, laying out of circuits, etc., for the plant designed.

(14.) Electric Railways. Second term, 3 hours a week; with practice.

Optional with fifth year students.

A continuation of the study of electric railway systems and apparatus as begun in the Senior year.

Practice, 4 hours a week.

(15.) Illuminating Engineering. Second term, 3 hours a week; with practice.

Optional with fifth year students.

Lectures and recitations on illumination and illuminants, with special reference to the use of electric lights.

Practice, 4 hours a week.

Practice in the testing of illuminants and the design of systems of illumination.

(16.) Telephone Engineering. Second term, 3 hours a week; with practice.

Optional with fifth year students.

Lectures and recitations on the telephone system, as a whole, methods of construction, systems in use, etc.

Practice, 4 hours a week.

The practice consists in laying out a system for a city with an estimate of cost of construction, etc.

EQUIPMENT.

This department is well equipped with apparatus for lecture table experiments. There is a fine projection lantern for general projections of slides and a good supply of slides.

In the laboratory there is sufficient apparatus to enable the students in Electrical Engineering to become familiar with all the operations that will be required of them in the practice of their profession.

The electrical laboratory is equipped with direct and alternating current dynamos and motors, transformers, a station photometer, an illumination photometer, an oscillograph, transmission dynamometers, storage batteries, samples of the various modern electric illuminants, dark rooms, and a full line of measuring instruments, rheostats, resistances, etc.

Through the generosity of the Otis Elevator Company a complete motor driven elevator winding-engine equipment of the most modern type, complete with all automatic switches, regulators, controllers, etc., has recently been donated and has been installed in the laboratory for test and demonstration purposes.

The laboratory is also equipped with a number of frames of dynamos and motors and cores of transformers that are used by the students in learning to wind and repair these machines.

The telephone laboratory is equipped with numerous telephones and telephone parts, a manual switchboard for both central energy and magneto operation, a Strowger automatic switchboard with complete equipment for operation, and storage batteries, condensers, etc., for use with the various systems. The Bryan Telephone Company operates a complete telephone switchboard, which is used to give local and long distance telephone service from various stations on the campus. This exchange is available to the students in Electrical Engineering for test.

The equipment for the students in Electrical Engineering is augmented by the facts that the direct connected generators in the power-house, their exciters and measuring instruments, and the motors used to operate the Textile School laboratories are available for tests as practical operating plants after the students have performed the required experiments on the machines located in the laboratory.

Students are encouraged to read books relating to their work, and for this purpose the department library is available. The technical books in the general library are also available. A reading table is maintained on which are kept copies of a number of technical magazines.

By means of liberal donations from manufacturers of electrical supplies and apparatus an exhibit room is maintained wherein are shown samples of a great variety of electrical supplies.

The department possesses a complete wireless telegraph station of sufficient capacity to reach a number of commercial plants in the State. This equipment is available for study both from an engineering and an operating standpoint.

COURSE IN MECHANICAL ENGINEERING.

The course in Mechanical Engineering is designed with a view of giving the student such training as will fit him to design, construct, and erect machinery, power plant equipment, etc., and to operate the same with the greatest economy of labor and materials.

It is not possible to give the student that experience which comes only with long service, but the aim is to give him the power to understand and apply established principles to engineering problems met with in practical work.

III.—COURSE IN MECHANICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	2
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
History 2 English.	2	History 2 English.	2
Mathematics 4 Analytics.	6	Mathematics 5 Calculus.	6
Mechanical Engineering 3 Elementary Steam Engineering.	3	Mechanical Engineering 4 Kinematics.	3
Military Science 1 Drill Regulations.	1	Military Science 1 Drill Regulations.	1
Physics 4 General.	3	Physics 4 General.	3
	18		18
Drawing 6	2	*Drawing* 6	4
Drawing 33	2	*Mechanical Engineering* 16	2
Mechanical Engineering 15	4	*Mechanical Engineering* 17	4
Physics 4	2	*Physics* 4	2
	10		12

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
Civil Engineering 6 Mechanics of Materials.	4	Civil Engineering 12 Stresses.	2
English 5 Argumentation.	1	English 5 Argumentation.	1
Mathematics 6 Practical.	2	Electrical Engineering 5 Electrical Machinery.	4
Mechanical Engineering 5 Steam Engines and Boilers.	3	Mechanical Engineering 5 Steam Engines and Boilers.	3
Mechanical Engineering 6 Eng. Mechanics.	2	Mechanical Engineering 6 Eng. Mechanics.	2
	15		15

Chemistry 1a	2	*Chemistry 1a*	2
Civil Engineering 6	2	*Mechanical Engineering 18*	3
Mechanical Engineering 18	3	*Mechanical Engineering 19*	4
Mechanical Engineering 19	4	*Electrical Engineering 5*	2
		Civil Engineering 12	2
	11		13

SENIOR YEAR.

Chemical Engineering 1 Industrial Chemistry.	3	Chemical Engineering 3 Metallurgy.	3
Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Mechanical Engineering 7 Thermodynamics.	6	Mechanical Engineering 8 Eng. Design.	3
Mechanical Engineering 8 Eng. Design.	3	Mechanical Engineering 9 Gas Engines.	3
Military Science 2	1		
	17		13

Mechanical Engineering 20	2	*Mechanical Engineering 21*	4
Mechanical Engineering 21	4	*Mechanical Engineering 22*	6
Mechanical Engineering 22	4		
	10		10

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR FERMIER, ASSOCIATE PROFESSOR H. E. SMITH, MR. HERRINGTON, MR. CHAPPELLE, MR. BECHERT, MR. L. B. MCMILLAN, MR. MORLEY, MR. STANDISH.

The work of this department is carried on in both class room and shop or laboratory, the two lines of work being designed to emphasize and reinforce each other.

In the shop practice the student works with woods and various kinds of metals; getting experience in the handling of tools and materials and acquiring a knowledge of the properties of materials by personal contact. Although he acquires a certain skill in the handling of tools, etc., yet the main result sought is not the training as a mechanic. Instead, it is expected that he will chiefly get the clear and definite ideas of the behavior of materials under the various technological processes which can be acquired only by personal contact and experience.

The class room work is taught by text-book, lecture and many numerical examples. The student is expected to understand the underlying principles and show their application in the solution and discussion of engineering problems of various sorts.

In the design rooms the instruction is given by lecture and reference books, together with practice, using the methods of drafting rooms of manufacturing concerns.

In the latter part of his course the student is expected to examine, operate, test and report on the various pieces of apparatus and equipment in the laboratory, shops and powerhouse.

The courses are as follows:

1. Elementary Mechanics. Freshman. First and second terms, 2 hours a week.

The work of this course consists of lectures, quizzes, and problems involving those principles of mechanics which are more commonly used in all branches of engineering.

No text-book is required, but each student is required to keep a notebook to contain the lectures and problems.

The second term's work must be preceded or accompanied by Mathematics 3.

(Required in all engineering courses.)

2. Shop Lectures. Freshman. First and second terms, 1 hour a week.

This course consists of lectures and quizzes (1) on hand and power tools and machines for working wood and metals, their construction, care and operation; (2) on the technological properties of materials of shop manufacture; and (3) on processes of manufacture.

No text-book is required, but a note book is required for the lectures.

(Required in all engineering courses.)

3. Elementary Steam Engineering. Sophomore. First term, 3 hours a week.

This course aims to give the student such a knowledge of steam power plant equipment as will enable him to understand the operation of the same, and serve as a foundation for subsequent study and calculation along these lines. Valve gears, valve diagrams, and indicator practice are also included.

Text: Elementary Steam Engineering, *Spangler.*

Prerequisite, *Mathematics* 3, *Physics* 3, *Mechanical Engineering* 1.

(Required in Courses III, VI; also in the Junior year of Courses IV, V, VIII, and in the second term of the Junior year of Course VII.)

4. Kinematics. Sophomore. Second term, 3 hours a week.

Without taking account of the strength of the structure, this course takes up the study of velocity ratios, comparative forces, etc., in machines and their elemental parts.

Text: Machine Design, Part I, *Jones.*

Prerequisite, *Mathematics* 2.

(Required in Courses III, VI, and in the Junior year of Courses V, VIII.)

5. Steam Engines and Boilers. Junior. First and second terms, 3 hours a week.

A study of the generation of steam; the construction, operation, care, design and testing of boilers of various types, together with the design of chimneys and other means of producing draft; followed by a study of the elementary thermodynamics of the heat engine; also the mechanics, construction, design and operation of the steam engine. Valve gears, indicators, governors, etc., are also studied.

Texts: Steam Boilers, *Parsons;* Steam Engines, *Creighton.*

Prerequisite, *Mathematics* 5, *Mechanical Engineering* 3, *Physics* 4; must be preceded or accompanied by *Chemistry* 1.

(Required in Course III, and in the Senior year of Course VIII.)

5a. Steam Engines and Boilers. Senior. First and second terms, 2 hours a week.

A briefer course than course 5, of which it is a modification.

(Required in Course V.)

6. Engineering Mechanics. Junior. First and second terms, 2 hours a week.

The mechanics of engineering problems arising in mechanical engineering work, with particular reference to the foundation principles involved in the analytical solution of problems involving the statics and dynamics of a material point and of a rigid body.

Text: Applied Mechanics, *Hancock.*

Prerequisite, *Mathematics* 5; must be preceded or accompanied by *Civil Engineering* 6.

(Required in Course III, and in the Senior year of Course VIII.)

7. Thermodynamics. Senior. First term, 6 hours a week.

This embraces a study of the effects of heat upon gases and the application of thermodynamic laws and principles to the steam engine, gas engine, hot air engine, injectors, calorimeters, etc., together with a study of heat efficiencies of these machines and instruments.

Text: Thermodynamics, *Peabody.*

Prerequisite, *Mechanical Engineering* 5.

(Required in Course III.)

8. Engineering Design. Senior. First and second terms, 3 hours a week.

A study of the design of engines, pumping machinery, etc., from the standpoint of their strength, speed regulation, construction, and economical performance; also a study of the design of power plants, as to capacities and arrangements.

Prerequisite, *Mechanical Engineering* 6, 7; must be accompanied by *Mechanical Engineering* 21.

(Required in Course III.)

9. Gas Engines. Senior. Second term, 3 hours a week.

The application of the principles of thermodynamics to the design of gas engines. Also the study of the different cycles, methods of governing, and some details of construction of various types of gas engines and other internal combustion motors.

Text: The Gas Engine, *Jones.*

Prerequisite, *Mechanical Engineering* 7.

(Required in Course III.)

PRACTICE COURSES.

Note.—To secure credit for the courses in shop practice, the student must do more than finish a certain number of exercises. He will be expected to put in full catalogue time and to do creditable work.

13. Carpentry. Freshman. One term, 6 hours a week.

Shop practice in the use of common bench tools and power machinery for working in wood.

(Required in all engineering courses.)

13a. Carpentry. Freshman. First term, 4 hours a week.

A modification of course 13.

(Required in Course I, and in the first year of the two-year course in Textile Engineering.)

14. Forging. Freshman. One term, 6 hours a week.

Shop practice in the use of blacksmith and general forge tools in the working of iron and steel. Also tempering, annealing, welding, case-hardening, etc.

(Required in all engineering courses.)

Note.—Courses 13 and 14 together constitute a year's work, 6 hours a week. The Freshman engineering students will be divided into two groups at the beginning of the first term; one group will begin with course 13, and the other with course 14. At the beginning of the second term the groups will each change to the other work.

14a. Forging. Second term, 4 hours a week.

A modification of course 14.

(Required in the first year of the two-year course in Textile Engineering.)

15. Wood Turning. Sophomore. First term, 4 hours a week.

Instruction and shop practice in the use of wood turning tools for center, chuck and face-plate work.

(Required in Course III, in the Junior year of Course VIII, and in the second year of the two-year course in Textile Engineering.)

15a. Wood Turning. Sophomore. First term, 2 hours a week.

A modification of course 15.

(Required in Courses V, VI.)

16. Kinematic Drawing. Sophomore. Second term, 2 hours a week.

Practice in the construction of kinematic diagrams.

Must be accompanied by *Mechanical Engineering* 4.

(Required in Course III.)

17. Pattern Making and Foundry Work. Sophomore. Second term, 4 hours a week.

Shop practice in pattern making, molding, and casting in iron, brass, etc.

(Required in Course III.)

Note.—Patterns will be made the same as in commercial shops, but molding and casting can not be in other than brass, owing to limited foundry equipment.

18. Machine Design. Junior. First and second terms, 3 hours a week.

This course consists of practice in the design of machine elements, and their proper representation by finished shop drawings.

Text: No text will be required, but each student is urged to secure a Kent's or a Suplee's handbook.

(Required in Course III.)

19. Machine Shop Practice. Junior. First and second terms, 4 hours a week.

Practice in bench and machine-tool work in metals. This includes chipping, scraping, filing, babbiting, drilling, turning, boring, grinding, milling machine work, etc.

(Required in Course III.)

19a. Machine Shop Practice. Junior. First term, 2 hours a week.

A modification of course 19.

(Required in Course V.)

19b. Machine Shop Practice. Junior. One term, 4 hours a week.

A modification of course 19.

(Required in the first term of Course VI, and in the second term of the second year of the two-year course in Textile Engineering.)

20. Machine Shop Practice. Senior. First term, 2 hours a week.

A continuation of course 19.

(Required in Course III.)

21. Engineering Design. Senior. First and second terms, 4 hours a week.

Drawing room practice in the design of machines, and power plants.
Text: Hand-book, *Kent or Suplee.*
Must be accompanied by *Mechanical Engineering* 8.
(Required in Course III.)

22. Engineering Laboratory. Senior. First term, 4 hours; second term, 6 hours a week.

Instruction and practice in testing gauges, indicators, boilers, engines, etc., also a study of the actual mechanical operation of various machines.

In addition to the work with the apparatus, the student will be expected to make calculations and written reports on the investigations and the results obtained.

Text: Power Plant Testing, *Moyer.*
(Required in Course III.)

22a. Engineering Laboratory. Senior. First and second terms, 2 hours a week.

A modification of course 22.

(Required in Courses V, VIII, and in the first term only of the Junior year of Course IV.)

EQUIPMENT.

In the carpenter shop are excellent double work benches, equipped with quick-acting vises, and the saws, planes, chisels, etc., ordinarily found in a carpenter's kit. Supplementing these are a number of special tools in the tool room.

The wood turning equipment consists of a number of smaller lathes for the ordinary work, and a large pattern maker's lathe which admits of wide application. Besides the lathes there are band, jig and circular saws, planer and jointer, power driven, and grindstones for the students' use.

The forge room equipment consists of twenty-eight forges, all having power blast and exhaust, and eighteen hand forges, the necessary anvils, tongs, and other small tools usually found in the forge equipment.

In the machine shop the equipment is now very satisfactory. It consists of a full line of lathes, grinders, milling machines, etc., so that the student has an opportunity to learn how to operate the ordinary shop tools and machines. The equipment has been recently increased by the addition of four most excellent lathes and one automatic multiple spindle machine. One of the lathes is a most approved type of motor driven, geared-head precision machine; and is typical of the best of its kind. The automatic machine is one of the most highly specialized machines for the rapid production of duplicate small parts, and shows the student how such parts can be most cheaply made when the number needed warrants the employment of such means. The tool room contains a large assortment of drills, reamers, chucks, and other machine accessories, as well as the small tools for laying out work and accurately and properly measuring the same; calipers, micrometers, steel scales, punches, surface plates, etc.

The engineering laboratory contains steam engines, gasoline engines, steam turbines, steam and power pumps, fans, water motors, a hot-air engine, condensers, air pump, injectors and a full line of indicators, gauges, pyrometers, thermometers, tachometers, speed indicators, prony brakes, platform scales, etc., for conducting tests as outlined in course 22.

In addition, the laboratory has the use of all apparatus of the power plant, consisting of compound engines, Corliss and pumping engines of several different kinds; also the boilers of well-known makes and different types. The testing of these constitutes part of the course in Mechanical Engineering.

The ice plant and cold storage are also available for student study and testing.

The new equipment of the steam plant adds larger engines, condensers, air compressor, air lift pump, etc.

For the class room instruction there are numerous full-size wooden models of different kinds of engines, also sections of actual air-brake equipment and other appliances and fittings for railway and power plant equipment.

Besides the above mentioned equipment might be mentioned the fact that manufacturers have in some instances deposited or donated for the use of the department a number of standard appliances, which prove valuable to the student.

COURSE IN TEXTILE ENGINEERING.

The object of this course is to prepare young men for entering the field of textile manufacturing. The unprecedented development of the cotton milling industry in the South has brought about an era of prosperity and created a strong demand for educated young men in this industry. The State of Texas offers excellent advantages for the manufacture of cotton goods in its vast supply of raw material, intelligent labor, and excellent climatic conditions, and it is believed that cotton manufacturing will develop as rapidly as skilled and capable managers familiar with local conditions are to be had. The studies outlined have been selected with a view of giving theoretical and practical training in the manufacture of cotton goods as thorough as is possible with the time available.

VI.—COURSE IN TEXTILE ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing 1*	2
Drawing 3	2	*Drawing 32*	2
Mechanical Eng. 13 or 14	6	*Mechanical Eng. 14 or 13*	6
Physics 3	2	*Physics 3*	2
	12		12

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
History 2 English.	2	History 2 English.	2
Mechanical Engineering 3 Elementary Steam Engineering.	3	Mechanical Engineering 4 Kinematics.	3
Military Science 1 Drill Regulations.	1	Military Science 1 Drill Regulations.	1
Physics 4 General.	3	Physics 4 General.	3
Textile Engineering 1 Designing.	3	Textile Engineering 1 Designing.	3
	18		18
Chemistry 1a	2	*Chemistry 1a*	2
Drawing 6	2	*Drawing 6*	4
Drawing 33	2	*Textile Engineering 1*	2
Mechanical Engineering 15a	2	*Physics 4*	2
Physics 4	2		
	10		10

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 4 Organic.	2	Electrical Engineering 5 Electrical Machinery.	4
English 5 Argumentation.	1	Textile Engineering 5 Cotton Classing.	1
Textile Engineering 2a Yarn Manufacture	6	Chemistry 4 Organic.	2
Textile Engineering 3 Designing.	3	English 5 Argumentation.	1
Textile Engineering 4 Cotton Classing.	1	Textile Engineering 2a Yarn Manufacture.	3
Textile Engineering 6 Power Weaving.	2	Textile Engineering 3 Designing.	3
		Textile Engineering 6 Power Weaving.	2
	15		16

Chemistry 4	2	*Chemistry* 4	2
Mechanical Engineering 19*b*	4	*Electrical Engineering* 5	2
Textile Engineering 2*a*	2	*Textile Engineering* 2*a*	4
Textile Engineering 6	4	*Textile Engineering* 6	4
	12		12

SENIOR YEAR.

Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Textile Engineering 7 Yarn Manufacture.	3	Textile Engineering 7 Yarn Manufacture.	3
Textile Engineering 8 Designing.	4	Textile Engineering 8 Designing.	4
Textile Engineering 9 Power Weaving.	2	Textile Engineering 9 Power Weaving.	2
Chemistry 12 Dyeing.	2	Textile Engineering 10 Yarn Manufacture.	2
Military Science 2	1	Textile Engineering 11 Mill Management.	2
	16		17

Chemistry 12	2		
Textile Engineering 7	4	*Textile Engineering* 7	4
Textile Engineering 9	4	*Textile Engineering* 9	6
	10		10

DEPARTMENT OF TEXTILE ENGINEERING.

PROFESSOR BAGLEY, ASSISTANT PROFESSOR TATUM.

The Legislature having made a liberal provision for the establishment of a Textile School as a department of the College, a suitable building of modern cotton mill construction has been erected, and an excellent equipment has been secured. The building offers excellent opportunities for the study of the details of mill construction.

The equipment has been carefully selected with a view of having a wide variety of the leading makes of cotton mill machinery represented. This will afford the student the opportunity of becoming familiar with such machinery as that with which he is likely to come in contact in the mills of the country.

Instruction will be confined to the manufacture of cotton goods and a thorough training will be given in the manufacture of many classes of cotton yarns and fabrics.

Instruction is given by the use of text-books, lectures, recitation and the practical operation of the machines in the actual production of yarns and fabrics.

The instruction in this department is divided into four sections, viz., Yarn Manufacturing, Weaving, Designing, and Chemistry and Dyeing. These subjects are so treated as to cover the manufacture of all classes of cotton yarns and fabrics.

A considerable amount of equipment has been added which is operated on a commercial basis. This offers an opportunity to the student to observe a cotton mill in operation, turning off a finished product. A part of the student's practice is to take charge of this machinery and put the stock through. This is entirely a new feature for a textile school and should increase the efficiency to a considerable extent.

The dye laboratory is a new addition and contains adequate machinery for instruction in dyeing and bleaching yarn and cloth.

The courses are as follows:

1. Designing. Sophomore. First and second terms, 3 hours a week; with practice.

This course includes the classification of fabrics; the elementary principles of fabric structure; the explanation of various technical terms applied to designs and fabrics; the representation of drawing-in drafts and harness chains; the design of fancy shirting, madrases, and dress goods, etc.

Practice, second term, 2 hours a week.

(Required in Course VI; without practice in the two-year course.)

2a. Yarn Manufacture. Junior. First term, 6 hours; second term, 3 hour as week; with practice.

Recitations on the machinery and processes in the manufacture of coarse cotton yarns. Instruction is given with a view of imparting a general knowledge of the machinery and processes, including the study of the raw material; mixing; mixing machinery; construction and operation of feeder and picking machinery, carding, drawing, slubbing, roving, ring spinning, spooling, reeling, and twisting; calculations to determine the necessary gearing to produce given numbers, speeds and production.

Practice, first term, 2 hours; second term, 4 hours a week.

(Required in Course VI and in the two-year course.)

3. Designing. Junior. First and second terms, 3 hours a week.

A combination of course 1 and the design of lenos, two and three-ply fabrics, and pile fabrics. The course is supplemented by the practice in power weaving.

Prerequisite, *Textile Engineering* 1.

(Required in Course VI and in the two-year course.)

4. Cotton Classing. Junior. First term, 1 hour a week.

This course offers instruction in judging and classifying cotton.

(Required in Course VI.)

5. Cotton Classing. Junior. Second term, 1 hour a week.

In addition to cotton judging and classing, instruction will include the ways of handling the crop from the field to the mill.

(Required in Couse VI; and of Seniors in Course I, Groups A. B; and optional in Group C.)

6. Power Weaving. Junior. First and second terms, 2 hours a week; with practice.

Recitations and lectures on the construction, operation and adjustment of the plain and fancy looms; a study of the timing and setting of the various parts, and weave room calculations.

(Required in Course VI.)

Practice, 4 hours a week.

7. Yarn Manufacture. Senior. First and second terms, 3 hours a week; with practice.

Recitations and lectures; a continuation and more exhaustive treatment of the subjects of course 2. In addition the study of warp preparation and of the machinery necessary for the manufacture of fine cotton yarns, including the sliver lap machine, ribbon lap machine and comber, and a study of the spinning mule, organizations for the manufacture of all classes of yarns and the preparation of fancy warps.

Practice, 4 hours a week.

(Required in Course VI and in the two-year course.)

8. Designing. Senior. First and second terms, 4 hours a week.

Fabric analysis, including the dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, including the production of original designs, card cutting and lacing. This course is supplented by the production of dobby and Jacquard designs on power looms.

Prerequisite, *Textile Engineering* 3.

(Required in Course VI.)

9. Power Weaving. Senior. First and second terms, 2 hours a week; with practice.

Recitations and lectures on the construction, operation and adjustment of leno and Jacquard machines. A study of the different "tie-ups" used in Jacquard weaving. Sketching the most important motions on automatic and dobby looms.

Practice, first term, 4 hours; second term, 6 hours a week.

Prerequisite, *Textile Engineering* 4.

(Required in Course VI.)

10. Yarn Manufacture. Senior. Second term, 2 hours a week.

Recitations and lectures. The object here will be to present the work of the management of a plant in looking after the operation of the departments of the mill.

Prerequisite, *Textile Engineering* 2.

(Required in Course VI.)

11. Mill Management. Senior. Second term, 2 hours a week.

Lectures and recitations on the general management of cotton mills, including the study of fire protection, cost of production in the various departments, labor conditions and wages, care of mill and mill village.

(Required in Course VI and in the two-year course.)

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

First Year.

6a. Weaving. First and second terms, 3 hours a week; with practice.

A modification of course 6.

Practice, first term, 4 hours; second term, 2 hours a week.

Second Year.

9a. Weaving. First term, 3 hours a week; with practice.

A modification of course 9.

Practice, first and second terms, 4 hours a week.

16. Designing. First and second terms, 1 hour a week.

Fabric analysis; including the dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, cutting cards from original designs.

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17. Cotton Classing. First Year. First term, 2 hours a week. Practice.

The course covers the handling of the crop from the field to the mill; the method of establishing classes for cotton and their values, and practice in judging the value of samples.

(Required in the two-year course in Agriculture.)

EQUIPMENT.

The building itself is a modern cotton mill model and is equipped in general with an automatic system of sprinkler heads for fire protection. The building is heated with steam and the atmosphere is kept in ideal condition for the manufacturing of cotton by a system of humidifiers. The power is furnished by electric motors conveniently distributed over the building, while the shafting, pulleys and hangers serve as an example of standard construction of such things.

In the department of yarn manufacture there is every equipment necessary to produce carded or combed yarns and with it, machines for making chain or slashed warps of either single or double yarns.

In the weaving room there are ten hand looms for the weaving of short fancy patterns. There are fourteen Northrop looms, which are entirely automatic, and two plain looms for ordinary plain goods. There are two ordinary dobby looms, with box motion to insert four colors for filling; one dobby loom for weaving terry towels; one dress goods loom, with dobby and boxes for making a seven-colored pattern; one loom for weaving narrow Jacquard dress goods, and one wide Jacquard loom for weaving table covers.

The finishing machinery is for ordinary ducks, sheetings or drills, and consists of an inspecting machine, railway sewing and rolling machine, a brushing and calendering machine, and a cloth-folding machine.

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year Course in Textile Engineering the candidate must be at least sixteen years of age and be able to pass entrance examinations in English Grammar and Composition and in Algebra to simultaneous equations of the first degree, or must present a satisfactory certificate of proficiency in these subjects.

PLAN OF THE COURSE.

The two-year course in Textile Engineering is intended for young men who wish to take up the work of cotton manufacturing and can not spend more than two years in preparation.

The aim of the course is to prepare young men for the responsible positions in a cotton mill after a short term of apprenticeship. Certificates will be given students who complete the work as outlined.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 9 Grammar, Composition.	3	English 9 Grammar, Composition.	3
Textile Engineering 1 Designing.	3	Textile Engineering 1 Designing.	3
Textile Engineering 2 Yarn Manufacture.	3	Textile Engineering 2 Yarn Manufacture.	3
Textile Engineering 6a Weaving.	3	Textile Engineering 6a Weaving.	3
	12		12
Drawing 23	1	*Drawing* 23	1
Drawing 24	2	*Drawing* 24	2
Mechanical Engineering 13*a*	4	*Mechanical Engineering* 14*a*	4
Textile Engineering 2	2	*Textile Engineering* 2	4
Textile Engineering 6*a*	4	*Textile Engineering* 6*a*	2
	13		13

SECOND YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 10 Composition, Rhetoric.	3	English 10 Composition, Rhetoric.	3
Textile Engineering 7 Yarn Manufacture.	3	Textile Engineering 3 Designing.	3
Textile Engineering 9a Weaving.	3	Textile Engineering 7 Yarn Manufacture.	3
Textile Engineering 3 Designing.	3	Textile Engineering 11 Mill Management.	2
Textile Engineering 16 Designing.	1	Textile Engineering 16 Designing.	1
	13		12
Drawing 25	4	*Drawing* 25	4
Mechanical Engineering 15	4	*Mechanical Engineering* 19*b*	4
Textile Engineering 7	4	*Textile Engineering* 7	4
Textile Engineering 9*a*	4	*Textile Engineering* 9*a*	4
	16		16

SUMMER SCHOOL OF COTTON CLASSING.

The fifth session of the Summer School of Cotton Classing of the Agricultural and Mechanical College of Texas wil open June 16, 1913 and will continue six weeks.

The object of the course in Cotton Classing is to prepare young men for cotton buying and the running of cotton warehouses, and to offer to farmers the opportunity to increase their knowledge of the leading farm crop of Texas.

A study is made of the elements which determine the commercial grades of cotton, the influences which affect the price of cotton; the system of financing the crop from the field to the factory, and the relation of exchanges to the business in general. New samples are put each day on the cotton tables for practice, and the work is patterned somewhat after that of a cotton office.

The first hour each morning will be spent in the study of Miller's "American Cotton System," the Government's Report on "Cotton Exchanges" and other literature on the subject.

EXPENSES.

Registration fee	$ 7 50
Board at local hotel, per month	20 00
Room at local hotel, per month	8 00

The registration fee is in no case refunded.

EQUIPMENT.

Students in the Summer School will have the use of the library and reading room, and of the shower baths. Those interested will have the opportunity to inspect the College farm, sheds, barns, silos, dairy, creamery and experimental plots.

Instruction in Cotton Classing is given in the Textile Building and there the student can be shown the processes of manufacturing cotton and where the cotton goes.

The Government standards for classing cotton, which have been adopted by nearly all the leading exchanges with the exception of New York, will be used.

The State Experiment Station has in its cotton laboratory a fiber testing machine, showing the breaking strength of the individual fiber, and an instrument for measuring the length accurately. Demonstrations will be made showing the use and value of these machines.

FIFTH YEAR'S WORK IN ENGINEERING.

In the engineering courses a fifth year's work is offered to young men who have obtained the bachelor's degree in this College or other institution approved by the Faculty. The work of this year leads to the professional degree of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, or Textile Engineer. The instruction is entirely technical and consists of advanced work in various engineering subjects as shown in the tabular statement following. It is believed that the graduate will find it well worth while to take this work, either immediately after graduation, or after a year or more spent in active work; and that the wider acquaintance with engineering subjects, and the power of investigation so acquired will prove to be decidedly promotive of his professional advancement.

A thesis is required and must be typewritten and bound in a manner satisfactory to the head of the leading department in each course. No drill is required.

The curricula shown on the following pages are for students receiving their bachelor's degree prior to June, 1914.

The elective work is subject to the approval of the head of the leading department.

COURSE IN CHEMICAL ENGINEERING.

(Leading to the Degree of Chemical Engineer.)

FIFTH XEAR.

Note.—The number in parenthesis following the name of a department refers to the number of the course as shown in the description of that department in the thirty-third annual catalogue.

First Term.	Hours per week.	Second Term.	Hours per week
Chemical Engineering 11 Adv. Ind. Chemistry.	2	Chemical Engineering 11 Adv. Ind. Chemistry.	2
Chemical Engineering 12 Rarer Elements.	2	Chemical Engineering 13 Chem. Preparations.	2
Elective	6	Elective	6
Chemical Engineering 11, 12	16	*Chemical Engineering* 11, 13	16

COURSE IN CIVIL ENGINEERING.

(Leading to the Degree of Civil Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Civil Engineering (31) Astronomy.	2	Civil Engineering (32) General Civil Engineering.	2
Civil Engineering (11) Least Squares.	2	Civil Engineering (14) Contracts.	2
Civil Engineering (12) Bridge Designing.	3	Civil Engineering (11) Geodesy.	2
Civil Engineering (32) General Civil Engineering.	2	Civil Engineering (12) Bridge Designing.	3
Elective	6	Elective	6
Civil Engineering	8	*Civil Engineering*	8

COURSE IN ELECTRICAL ENGINEERING.

(Leading to the Degree of Electrical Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Electrical Engineering (5) Elec. Design.	3	Electrical Engineering (13) Power Plant Design.	3
Electrical Engineering (6) Adv. Elec. Mach.	3	Electrical Engineering (6) Adv. Elec. Mach.	3
Electrical Engineering (12) Elec. Power Distribution.	3	Electrical Engineering (14) Electric Railways. *or* Electrical Engineering (16) Telephone Eng. *or* Electrical Engineering (15) Illuminating Eng.	3
Elective	6	Elective	6
Electrical Engineering (5), (6)	8	*Electrical Engineering* (5), (6), (14), or (15), or (16)	8

COURSE IN MECHANICAL ENGINEERING.

(Leading to the Degree of Mechanical Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Mechanical Engineering Analytical Mechanics.	3	Mechanical Engineering Analytical Mechanics.	3
Mechanical Engineering Steam Turbines.	3	Mechanical Engineering Gas Producers.	3
Mechanical Engineering Refrigeration.	3	Mechanical Engineering Power Plants.	3
Elective	6	Elective	6
Mechanical Engineering	8	*Mechanical Engineering*	8

COURSE IN TEXTILE ENGINEERING.

(Leading to the Degree of Textile Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Textile Engineering (4) Yarn Manufacture.	3	Textile Engineering (4) Yarn Manufacture.	3
Textile Engineering (10) Weaving.	2	Textile Engineering (13) Designing.	4
Textile Engineering (13) Designing.	4	Textile Engineering (15) Mill Management.	2
Elective	6	Elective	6
Textile Engineering (4), (10)	8	*Textile Engineering* (4), (10)	8
Elective	2	*Elective*	2

General Studies

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

CHEMISTRY.

PROFESSOR BLAKE, DR. HEDGES, MR. NELSON, MR. THORNTON,
MR. NEWTON.

The work in Chemistry begins in the Sophomore year of the courses in Agriculture and Chemical and Textile Engineering, and in the Junior year and all the other courses. A broad foundation is laid in the beginning course of General Inorganic Chemistry, which extends throughout the year, and is required in all Courses. The remaining subjects described below include the work in Agricultural Chemistry and various special courses. The advanced work of the students of Chemical Engineering is described under that Course. Most of the work is given by lectures, illustrated by experiments, and supplemented by laboratory work, with frequent oral and written quizzes.

The courses are as follows:

1. General Inorganic Chemistry. First and second terms, 3 hours a week; with practice.

In this course the foundation principles of all chemical activity are fully discussed and demonstrated. The chemical elements and their compounds are then taken up separately and systematically. Industrial applications of the more important chemical processes are briefly described, and organic chemistry is touched upon. This course must precede all other chemical studies. A preliminary course in physics is prerequisite. Lectures, illustrated by experiments.

Text: General Chemistry, Theoretical and Applied, *Blake.*

Practice, 4 hours a week.

General laboratory work, duplication of lecture experiments, qualitative analysis, simple tests of technical importance.

(Required in Course VIII.)

1a. General Inorganic Chemistry. First and second terms, 3 hours a week; with practice.

The same as course 1, except as to amount of practice.

Practice, 2 hours a week.

(Required of Sophomores in Courses I, VI; of Juniors in Courses III, IV, V, VII, IX.)

2. Agricultural Chemistry. Junior. First and second terms, 3 hours a week.

This is a study of the fundamental chemical principles of agriculture, and in addition to giving the student a grasp of the application of chemistry to agriculture, it helps him to understand the chemical terms used in Experiment Station literature. The chemistry of plant growth, soils, irrigation water, fertilizers, feeding stuffs and animal nutrition are studied. Lectures.

Prerequisite, *Chemistry* 1a.

(Required in Course I.)

3. Agricultural Analysis. Junior. First term, 4 hours; second term, 2 hours a week. Practice.

This course serves to familiarize the student with the composition and behavior in the laboratory of many materials important in agriculture. It consists of a determination of the percentage of water and ash in various products, together with sugars, starch, crude fibre, fat, protein, potash and phosphoric acid. In order to facilitate the work of the student, standardized reagents are supplied by the instructor.

Prerequisite, *Chemistry* 1a.

(Required in Course I.)

4. Organic Chemistry. Junior. First and second terms, 2 hours a week; with practice.

In this course the general principles and theories of organic chemistry, together with the general methods of preparation and synthesis of organic compounds are treated in detail. Special attention is given to compounds of technical importance, thus laying a foundation for work in dyeing, in agricultural chemistry, and in many processes of industrial chemistry. Lectures.

Text: Organic Chemistry, *Remsen.*

Practice, 2 hours a week.

Preparation and properties of simple organic compounds; synthesis of complex organic substances.

Prerequisite, *Chemistry* 1, *or* 1a.

(Required in Courses VI, VIII, I Group D; optional in I Groups A, B, C.)

5. Geology. Junior. First term, 2 hours a week; with practice.

This course deals primarily with dynamic and structural geology, but historical geology is briefly considered. Special attention is given to the weathering of rocks and to the chemical explanations of many geological phenomena.

Text: An Introduction to Geology, *Scott.*

Practice, 2 hours a week.

The laboratory work in this course consists largely of determinative mineralogy and lithology, with special tests on coals, petroleums, and mineral waters.

Text: Tables for the Determination of Common Minerals, *Crosby.*

Prerequisite, *Chemistry* 1.

(Required in Course VIII.)

6. Advanced Agricultural Analysis. Senior. First and second terms, 2 hours a week; with practice.

In this work the methods of exact analysis are discussed in the lectures and, so far as time allows, applied in the laboratory. The official methods of analysis are used throughout the work; but other methods are frequently used for comparison. It supplies a working basis for course 8, or any further study of agricultural chemistry.

Practice, 6 hours a week.

Prerequisite, *Chemistry* 2.

(Required in Course I, option 2, Groups A, B, C.)

7. Physical Chemistry. Senior. First term, 2 hours a week; with practice.

This is an elementary course, emphasizing the phenomena which show the state of substances in solution. Lectures.

Practice, 4 hours a week.

Molecular weight determinations by vapor-density and freezing-point methods; electrical conductivity; migration of ions and of colloids; osmosis.

Prerequisite, *Chemistry* 4.

(Required in Course I, option 2, Groups A, B, C.)

8. Advanced Agricultural Chemistry. Senior. Second term, 2 hours a week; with practice.

Studies of selected topics concerning the chemistry of soils, plants, or animal nutrition, in such a way as to give the student a knowledge of the methods used in agricultural investigation, and to aid him to develop habits of independent thought.

Bulletins, scientific journals, lectures.

Practice, 4 hours a week.

The student is expected in this work to take up some special problem in agricultural chemistry, or to work on the chemical phase of some problem simultaneously pursued in some other department.

Prerequisite, *Chemistry* 7.

(Required in Course I, option 2, Groups A, B, C.)

9. Dairy Chemistry. Senior. Second term, 2 hours a week; with practice.

The object of this course is to study the composition of milk and the principal chemical changes that take place in the handling of it, and in its manufacture into butter and cheese. It includes the analysis of cream, butter and cheese; the testing for adulterants; sanitary conditions necessary for creamery work, and influences of different feeds on the quality of dairy products.

Practice, 6 hours a week.

(Required in Course I, Group D.)

10. Geology. Senior. Second term, 4 hours a week; with practice.

This course consists of a study of dynamic, structural, and economic geology, with emphasis on the non-metallic minerals—coal, petroleum, building stones, clay, lime and cement, gypsum, abrasives, and road materials.

Texts: Introduction to Geology, *Scott;* Economic Geology of the United States, *Ries.*

Practice, 2 hours a week.

Largely determinative mineralogy and lithology, with special tests on some of the non-metallic minerals.

Text: Tables for the Determination of the Common Minerals, *Crosby.*

Prerequisite, *Chemistry* 1a.

(Required in Courses IV, VII, IX.)

11. History of Chemistry. Senior. Second term, 1 hour a week.

This course puts the development of chemical theories in their historical setting and gives an intimate acquaintance with the lives of great chemists.

Prerequisite, *Chemistry* 7, or *Chemical Engineering* 4, first term.

(Required in Course VIII.)

12. Dyeing. Senior. First term, 2 hours a week; with practice.

This course consists of a study of the physical and chemical properties of textile fibers, dyes, dyestuffs and mordants, together with the principles and appliances involved in the commercial coloring of textiles, especially cotton and woolen goods. Lectures.

Practice, 2 hours a week.

All the principles discussed in the lectures are tested in the laboratory, with especial attention to the production of dyeing to meet particular commercial requirements.

Prerequisite, *Chemistry* 4.

(Required in Course VI.)

20. Practical Chemistry. First and second terms, 3 hours a week; with practice.

This course is intended to familiarize the student with the facts underlying the more important chemical processes involved in agricultural operations, such as fertility of soils, plant growth and the digestibility of feeds. The elementary principles of inorganic chemistry are first considered. This is followed by a detailed description of the composition of most of the common foods and feeds, and a study of the conditions affecting their composition during growth. A study of the rational feeding of men and animals completes this course. Lectures, recitations and quizzes.

Text: Chemistry of Plant and Animal Life, *Snyder;* Soils and Fertilizers, *Snyder.*

Practice, 2 hours a week.

Most of the principles discussed in the lectures are confirmed by the student in the laboratory.

(Required in the two-year course in Agriculture.)

EQUIPMENT.

The department has the usual laboratory facilities, including a vacuum system for rapid filtration, a compressed-air system for use with blast lamps and a ventilating system. The laboratories are supplied with hydrant, cistern and distilled water. Each student is assigned to a lock-desk containing the necessary equipment. The large lecture room, with raised seats, has a seating capacity of one hundred. The museum occupies a large, well-lighted room. The department has a good reference library.

DEPARTMENT OF DRAWING.

PROFESSOR A. MITCHELL, MR. GEIST, MR. REDLICH, MR. MANSFIELD.

Instruction in Drawing and Descriptive Geometry is given with three objects in view: First, to train the student by developing his powers of observation and imagination; second, to provide a basis for further instruction in other departments; and, third, to prepare the student for professional work as a draftsman.

The department is equipped with the necessary tables, models and reference books.

The courses are as follows:

1. Mechanical Drawing. Freshman. First and second terms, 2 hours a week. Practice.

Use and care of drawing instruments, instrumental drawing, free-hand and mechanical lettering, geometrical constructions, projections, intersections, developments, axonometry, shades and shadows and perspective.

Text: Mechanical Drawing, Parts I and II, *Giesecke.*

(Required in all engineering courses.)

2. Descriptive Geometry. Freshman. First and second terms, 3 hours a week.

Problems relating to the point, line, plane and solids; problems in tangency and intersections, in shades and shadows and in perspective.

Text: Descriptive Geometry, *Giesecke.*

(Required in all engineering Courses.)

3. Freehand Drawing. Freshman. First term, 2 hours a week. Practice.

Drawing from geometrical solids, common objects, plaster casts, and still life, to study form, proportion, light and shade.

(Required in all four-year Courses.)

31. Freehand Drawing. Freshman. Second term, 2 hours a week. Practice.

Drawing of farm tools, implements and structures, and objects from plant and animal life. Elementary water color.

(Required in Course I.)

32. Freehand Drawing. Freshman. Second term, 2 hours a week. Practice.

Drawing of machines, machine parts, engineering structures, details.

(Required in all engineering Courses except VII, IX.)

33. Freehand Drawing. Sophomore. First term, 2 hours a week. Practice.

A continuation of course 32 with special attention to measuring objects and dimensioning drawings.

Prerequisite, *Drawing* 32.

(Required in all Engineering Courses except VII, IX.)

6. Mechanical Drawing. Sophomore. First term, 2 hours; second term, 4 hours a week. Practice.

Working drawings of elementary parts of machines and engineering structures, tracing and photo printing.

Text: Mechanical Drawing, Part III, *Giesecke.*

Prerequisite, *Drawing* 1.

(Required, in the first term , in all Engineering Courses; in the second term, in all except VII, IX.)

9. Topographical Drawing. Junior. First term, 2 hours a week. Practice.

Topographic signs, topographic maps and out-door sketching.

Prerequisite, *Drawing* 6.

(Required in Course IV.)

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

First Year.

23. Freehand Drawing. First and second terms, 1 hour a week. Practice.

Drawing from geometrical solids and common objects to study form and proportion.

24. Mechanical Drawing. First and second terms, 2 hours a week. Practice.

Use and care of drawing instruments, instrumental drawing, freehand and mechanical lettering, and geometrical constructions.

Text: Mechanical Drawing, Part I, *Giesecke.*

Second Year.

25. Mechanical Drawing. First and second terms, 4 hours a week. Practice.

Working drawings of elementary parts of machines and engineering structures, tracing and photo printing.

Text: Mechanical Drawing, Part III, *Giesecke.*

Prerequisite, *Drawing* 24.

DEPARTMENT OF ENGLISH.

PROFESSOR FOUNTAIN, ASSISTANT PROFESSOR THOMAS, MR. BRESSLER, MR. COFER, MR. WOODS, MR. ROSS, MR. FRIZZELL, MR. GUNTER, MR. CLICK, MR. POWELL.

The aim of this department is to give students such training as will enable them to use their mother tongue readily and accurately. The instruction, therefore, is practical rather than theoretical. Frequent written exercises are required, and these exercises are not only carefully read by the instructor, but are also discussed in personal conferences with the individual student. In this way each student has his attention called to his most frequent errors; and suggestions, especially adapted to his needs, are made. Experience has proved that a student often gets more benefit from a fifteen minutes' personal conference with an instructor than he does from an hour's lecture in the class room.

The courses are as follows:

1. Rhetoric and Composition. Freshman. First and second terms, 3 hours a week.

This course involves recitations, readings from masterpieces of literature, composition writing, and personal conferences at hours to be arranged with the instructors.

)Required in all four-year Courses.)

2. English Literature. Sophomore. First and second terms, 2 hours a week.

This course affords an opportunity for the student to obtain a general knowledge of the outline of English Literature, the different stages of development being illustrated by the critical reading of a classic of each period. Students are also required to do a large amount of reading outside of the class room and to submit written reports on what they read.

Prerequisite, *English* 1.

(Required in all four-year Courses.)

3. English Composition. Sophomore. First and second terms, 1 hour a week.

This course is intended to give practice in organizing and writing longer themes than are required in course 1. In addition to weekly compositions, the work involves recitations and personal conferences.

Prerequisite, *English* 1.

(Required in all four-year Engineering Courses.)

4. Advanced Composition. Junior. First and second terms, 3 hours a week.

This course will involve continual practice in writing, and a study of modern English literature illustrating the principal kinds of prose composition. Personal conferences with the instructor will be required.

Prerequisite, *English* 1.

(Required in Course I.)

5. Argumentation. Junior. First and second terms, 1 hour a week.

This course will involve a study of the essentials of argumentation, and practice in drawing briefs.

(Required in all four-year Engineering Courses.)

6. Public Speaking. Senior. First and second terms, 1 hour a week.

The aim of this course is to help the student to a simple, direct manner of speaking. The work consists of the oral interpretation of some of the best orations, writing and delivering original pieces, and debating. Personal conferences with the instructor are required.

(Required in all four-year Courses.)

TWO-YEAR COURSES.

First Year.

9. Grammar and Composition. First and second terms, 3 hours a week.

This course includes a rapid but thorough review of the essentials of English Grammar, composition writing, and personal conferences with instructors.

Second Year.

10. Composition and Rhetoric. First and second terms, 3 hours a week.

In this course the written exercises are longer and on more difficult subjects than those of course 9. Especial attention is given to expository and argumentative composition, and to business correspondence. Parallel reading is required in both courses.

DEPARTMENT OF HISTORY AND ECONOMICS.

HISTORY.

PROFESSOR CHASTAIN, MR. CANFIELD.

It is the aim of this department to have the student learn that history deals with the life of a nation in the process of growth; that the content of history is not a dead thing, but that it lives and moves; that it is dynamical and not statical; that it obeys the law of continuity; that there are no breaks or leaps; that development may hasten or may slacken, but that it is always continuous, and that the operation of the law of continuity makes history a unit. The study of the life of any people reveals certain characteristics common to the history of all civilized nations; there will be found five well marked phases—a political, a religious, an educational, an industrial, and a social phase. The student should understand that history is one continuous current moving on toward one purpose—not one destiny for government, another for church, and so on, but that all these make one life with one destiny. The student is encouraged to trace all these lines of growth, taking each great event and each series of events, discovering to what extent all institutions are affected.

Students are urged to make constant use of the College library, which contains a great many histories and biographies from which they may be able to pursue a systematic investigation for themselves.

The courses in history are as follows:

1. English History. Freshman. First and second terms, 3 hours a week.

This course traces the outline of English History from the earliest times to the present. In addition to the political history of England, the development of governmental institutions and the condition of the Church will receive some attention.

Texts: A History of Great Britain, *Tout.*
Atlas of English History, *Gardiner.*
(Required in Course I.)

2. English History. Sophomore. First and second terms, 2 hours a week.

Similar to course 1, but more comprehensive.

Texts: A History of Great Britain, *Trout;* Source Book, *Lee;* Atlas of English History, *Gardiner.*

ECONOMICS.

ASSOCIATE PROFESSOR LEAVELL.

The courses in economics have three objects. The student is expected to gain:

(1) An intelligent appreciation of the significant facts in the economic life of his own day.

(2) A method for getting an accurate knowledge of economic problems, or others, as they may arise in his later experience.

(3) An understanding of some of the ways by which the informed and public-spirited citizen may help his community in the solution of such problems.

The emphasis of the courses is upon modern organization and current problems, but history and theory will receive enough attention to make clear how the present order has grown out of past conditions, and to reveal the essential principles underlying the modern organization, so far as those principles are understood. The standpoint of the courses is economic efficiency.

The courses in economics are as follows:

3. Economic Organization and Theory. Senior. First and second terms, 3 hours a week.

This course considers the following topics: Natural resources as agents in production, conservation of natural resources, labor problems, money, banking and rural credits, co-operation in agriculture with especial reference to marketing, rural economics, problems of rural life, and a brief resume of industrial evolution and economic theory.

Texts to be assigned.

(Required in Course I.)

4. Economic Organization and Theory. Senior. First and second terms, 3 hours a week.

This course considers the following topics: Natural resources as agents in production; conservation of natural resources; scientific management of labor; labor problems; money and banking; business organization, especially as illustrated by corporations and transportation; and a brief resume of industrial evolution and economic theory.

Texts to be assigned.

(Required in all four-year engineering Courses.)

DEPARTMENT OF MATHEMATICS.

PROFESSOR PURYEAR, ASSOCIATE PROFESSOR R. F. SMITH, ASSISTANT PROFESSOR J. W. MITCHELL, ASSISTANT PROFESSOR MICHIE, ASSISTANT PROFESSOR GARNER, MR. JONES, MR. NICHOLS, MR. BOND.

Instruction in this department is given by the use of approved textbooks, supplemented by oral explanations and informal lectures. The student's knowledge of the subject is tested daily at the blackboard, and in each course written solutions of selected problems and review exercises involving the work of preceding courses are frequently assigned. Prominence is given to practical applications.

The courses are as follows:

1. Solid Geometry. Freshman. First term, 3 hours a week.

The course will include definitions, lines and planes in space, dihedral angles, polyhedral angels, polyhedrons, the cylinder, cone and sphere.

Solid Geometry, *Wentworth-Smith.*

(Required in all four-year engineering Courses.)

2. Algebra. Freshman. First and second terms, 3hours a week.

This course will include graphs, quadratic equations, ratio, proportion, variation, arithmetical progressions, geometrical and harmonical progressions, permutations, combinations; limits, undetermined coefficients, partial fractions, binomial theorem, logarithms, logarithmic and exponenential series, and such other topics as the time may allow.

Complete Secondary Algebra, *Fisher* and *Schwatt.*

(Required in all four-year engineering Courses.)

3. Plane Trigonometry. Freshman. Second term, 3 hours a week.

This course will include goniometry, review of logarithms, solution of right triangles, problems of heights and distances, properties of triangles, solution of oblique triangles, geometrical applications.

Text: Plane and Spherical Trigonometry, *Taylor* and *Puryear.*

(Required in all four-year engineering Courses.)

4. Analytics. Sophomore. First term, 6 hours a week.

The course will include the straight line, transformation of coordinates, circle, ellipse, hyperbola, the general equation of the second degree, solid analytic geometry.

Text: Analytic Geometry, *Nichols.*

(Required in al foulr-year engineering Courses except VI.)

Prerequisite, *Mathematics* 1, 2, 3.

5. Differential and Integral Calculus. Sophomore. Second term, 6 hours week.

The course will include differentiation, expansion of functions, indeterminate forms, functions of several variables, tangent and norma curvature, maxima and minima; integration, lengths, areas, volumes, moments of inertia; centers of gravity.

Text: Differential and Integral Calculus, *Osborne.*
(Required in all four-year engineering Courses except VI.)
Prerequisite, *Mathematics* 4.

5a. Differential and Integral Calculus. Second term, 3 hours a week.

This course will include the same topics as course 5. With the consent of the head of the department, students who have had that course through the term may take course 5a. Such students may remove a deficiency in course 5 by passing course 5a.

6. Practical Mathematics. Junior. First term, 2 hours a week.

Applications of the Calculus to engineering problems.
Text: Practical Mathematics, *Saxelby.*
(Required in all four-year engineering Courses except VI.)
Prerequisite, *Mathematics* 5.

11. Plane Geometry. Freshman. First and second terms, 3 hours a week.

The course will include definitions, rectilinear figures, the circle, similar polygons, areas of polygons, regular polygons, measurement of the circle.

Text: Plane Geometry, *Wentworth-Smith.*
(Required in Course I.)

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

LIEUTENANT BROWN.

The object of the military instruction given at this College is to develop the student physically by the systematic drill and exercise; to inculcate in students that unhesitating and subconscious obedience to constituted authority so essential to good citizenship; to qualify students to be company officers of Volunteers or Militia.

Graduates of this College may be given the opportunity by the War Department of taking the competitive examination for commissions as second lieutenant in the regular army; and their services are in demand as officers in the organizations of native troops in the Philippine Islands.

The Cadet Corps, which includes all students in attendance at the College, is organized as a regiment of infantry, consisting of band and three battalions of four companies each. All military instruction is under the immediate charge of the Commandant.

The officers and non-commissioned officers are selected from the Senior, Junior and Sophomore classes. They are appointed by the Commandant upon the approval of the President. Their appointments are dependent upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

The Military system regards a man for his inherent qualities of manhood and encourages ambition and self reliance; it is an aid in the enforcement of discipline and encourages regularity in attendance upon academic duties; it tends to develop that sense of duty and honor that mark a man as a gentleman.

The courses are as follows:

1. Drill Regulations. Sophomore. First and second terms, 1 hour a week.

The course includes infantry drill regulations through the schools of the soldier, company, battalion and regiment, both in close and extended order; reviews, inspections, parades, guard mounting, guard duty, small arms firing regulations, field service regulations and instruction in making out military records. It includes talks and lectures upon tactics, marching, camping, sanitation and modern firearms.

2. Military Science. Senior. First term, 1 hour a week.

This course includes the study of Napoleon's Italian Campaigns, in which the class is given lessons and required to stand a written examination. In connection with the lessons given to the class, the instruction also includes lectures upon organization, marches, discipline, rations, map reading, shelter trenches, duties of a company commander, and a resume of the military history, the military system, and of the military policy of the United States.

Texts: Napoleon Bonaparte's First Campaign, *Sargent;* The Campaign of Marengo, *Sargent;* Military Map Reading, *Beach.*

3. All Classes. First and second terms, 3 hours a week.

Infantry drill through the schools of the soldier, company, battalion and regiment in close and extended order, advance and rear guard, outposts and marches, regimental review, inspection, parade, escort of the colors, guard mounting, target practice for the Senior class, instruction in company reports, muster rolls, rosters, etc.

DEPARTMENT OF PHYSICS.

ACTING PROFESSOR WRIGHT, MR. MCPHEETERS, MR. LEHMANN, MR. SKEELER, MR. MCADAMS, STUDENT ASSISTANTS MR. BROWN AND MR. LANGFORD.

The courses in this department are designed to impart to students some acquaintance with the various fields of physics, to accustom them to exact reasoning from experiment to theory, and to prepare them for further instruction in the more technical studies of the various departments. Instruction is given by recitation from standard texts, supplemented by numerous illustrated lectures, quizzes and practical problems. Especial emphasis is given to laboratory work. Full written reports are required of all experiments performed. Practical applications of the principles involved are emphasized throughout the courses.

Since a thorough grounding in the fundamental principles of physics is essential as a prerequisite for the more technical work of the several courses from which students are graduated, effort is made to give general rather than specific instruction in this department.

The courses are as follows:

1. Elementary Physics. Freshman. First and Second terms, 3 hours a week; with practice.

Lectures, recitations, problems, and illustrations in elementary mechanics, heat, sound, and light.

Practice, 2 hours a week.

The practice includes: Measurements of precision with vernier and micrometer calipers and balances; curve plotting; accurate determinations of lengths, volumes, densities, forces, moments, stress, expansion, specific heat, heat exchange, refraction and reflection of light by various forms of lenses and mirrors, velocity of sound in different media, and the laws of vibrating strings. The Metric or the English system of units is used as the instructor may designate.

(Required in Course I.)

2. General Physics. Sophomore. First term, 2 hours a week; with practice.

This course is a continuation of course 1, the work of the term being largely devoted to electricity and magnetism.

Practice, 2 hours a week.

Prerequisite, *Physics* 1, *Mathematics* 11.

(Required in Course I.)

3. Elementary Physics. Freshman. First and second terms, 2 hours a week; with practice.

Lectures, recitations, problems and illustrations in elementary mechanics, heat, sound, and light. Particular stress is laid on problems presented in text-book and class.

Practice. 2 hours a week. For description, see course 1.

(Required in all four-year engineering Courses.)

4. General Physics. Sophomore. First and second terms, 3 hours a week; with practice.

Lectures, recitations, problems, and demonstrations in the theory of mechanics, heat, electricity and magnetism. In this course particular stress is laid on the derivation of the various formulas necessary for a thorough understanding of the mathematical relations existing in physical determinations. Much emphasis is placed on practical problems furnished by the instructors.

Practice, 2 hours a week.

The practice includes magnetic and electrical measurements and a series of exercises in mechanics and calorimetry more advanced than those of course 3.

Prerequisite, *Physics* 3, *Mathematics* 2, 3.

(Required in Courses III, IV, VI, VIII.)

6. General Physics. Sophomore. Second term, 2 hours a week; with practice.

This course is identical with the Electricity and Magnetism given in course 4.

Practice, 2 hours a week, equivalent to course 4. Second Term.

Prerequisite, *Physics* 3, *Mathematics* 2, 3.

(Required in Courses VII, IX.)

7. General Physics. Sophomore. Second term, 2 hours a week.

This course is identical with Heat given in course 4.

Prerequisite, *Physics* 3, *Mathematics* 2, 3.

(Required in Course V.)

8. General Physics. Sophomore. Second term, 2 hours a week.

This course is identical with the Mechanics given in course 4.

Prerequisite, *Physics* 3, *Mathematics* 2, 3.

(Required in Course V.)

9. General Physics. Sophomore. Second term, 2 hours a week. Practice.

This course consists of a series of laboratory exercises in calorimetry and mechanics.

(Required in Course V.)

EQUIPMENT.

The Department of Physics occupies the first floor and part of the basement of the Civil Engineering Building. Alternating and direct current, storage battery, water, gas, and electric lights are conveniently arranged and connected throughout the department. The equipment is sufficient for a great variety of demonstration and laboratory work.

Mechanics of Solids, Liquids, and Gases: Apparatus for determining moment of inertia, centrifugal force, acceleration, mechanical and electrical equivalent of heat, Young's Modulus, Hooke's Law; micrometer and vernier calipers, rotators, U. S. Standard Measures, air pumps, hydraulic press, cathetometer, balances, and many simple and compound machines.

Heat: Conductometers, thermopiles, expansion apparatus, various types of thermometers, and numerous calorimetric outfits.

Light: Polariscope, spectrometer, vernier microscope, nicols, camera, projection lantern, optical bench, Hartl discs, and a great variety of lenses and mirrors.

Sound: Sonometers, tuning forks, organ pipes, and wave motion apparatus.

Electrostatics: A very large static machine and accessories.

Current Electricity: Various types of batteries, rheostats, bridges, galvanometers, induction coils, telephone and telegraph fixtures, mercury arc and electrolytic rectifiers; ammeters, voltmeters, and motors for both alternating and direct current; and complete X-Ray outfit.

The department has a well chosen assortment of general and special accessories for use with the above apparatus.

The work-shop is supplied with lathe, drill-press, soldering outfit, stock materials, and the usual metal and wood working tools. In the shop all repairs and improvements are made and the specially devised apparatus, requiring continual test, is constructed. Many of the most useful pieces of apparatus have been constructed in the shop. Economy in time and money is thus effected.

The department library contains several hundred volumes treating of pure physics and kindred subjects.

GENERAL INFORMATION.

GRADES. REPORTS, EXAMINATIONS AND ADVANCEMENT.

Records of the standing of each student are kept by the instructors in the several departments. This standing is indicated by a system of marks based upon 100 as a maximum.

At the end of each term, examinations are held and a report is mailed to the parent or guardian of each student, showing his class standing and conduct. A preliminary report is made December 1.

When a student is absent from recitation a considerable number of times, his absences are taken into account in making up his term grade, unless the work missed is satisfatorily made up before the time set for the examination.

The passing mark is 70 for the Junior and Senior classes, and 66 for all other classes.

Reports are made in terms of letters with the following meanings: 90 to 100 inclusive, A; 80 to 89, inclusive, B; passing mark to 79, inclusive, C; from 50 to the passing mark, D; below 50, E. In "practice" only two grades are given; P passed; F failed. Students who receive a grade E in any subject must take the subject over in class in order to receive credit.

No student will be advanced from a lower to a higher class while he has recorded against him more than eight term-subjects; and no student will be classed as a Senior while he has recorded against him more than four term-subjects.

EXAMINATION SCHEDULE, FIRST TERM, SESSION 1913-14.

First Term.	Thursday January 29.	Friday January 30.	Saturday, January 31.	Monday, February 2.	Tuesday, February 3.	Wednesday, February 4.
Fresh. Ag.	Phys. 1	Math. 11	Biol. 1		Hist. 1	
Fresh. Eng.	Draw. 2	Math. 1	Phys. 3	M. E. 1	Math. 2	M. E. 2
Fresh. Arch.	Draw. 2	Math. 1	Phys. 3	M. E. 1	Math. 2	
Fresh. A. E.	Draw. 2	Math. 1	Phys. 3	M. E. 1	Math. 2	
Soph. Ag.	Phys. 2	Engl. 2 Mil. Sc. 1	Vet. Sc. 1 Agr. 2a	Chem. 1a	Hort. 1a	Biol. 2
Soph. A. E.		Engl. 2 Mil. Sc. 1	Arch. 27	Math. 4	Hist. 2	Arch. 26
Soph. Arch.		Engl. 2 Mil. Sc. 1	Arch. 27	Math. 4	Hist. 2	Arch. 26
Soph. Ch. E.	Phys. 4	Engl. 2 Mil. Sc. 1		Math. 4	Hist. 2	Chem. 1
Soph. C. E.	Phys. 4	Engl. 2 Mil. Sc. 1		Math. 4	Hist. 2	C. E. 1
Soph. E. E.		Engl. 2 Mil. Sc. 1		Math. 4	Hist. 2	E. E. 1
Soph. M. E.	Phys. 4	Engl. 2 Mil. Sc. 1		Math. 4	Hist. 2	M. E. 3
Soph. T. E.	Phys. 4	Engl. 2 Mil. Sc. 1	T. E. 1	Chem. 1a	Hist. 2	M. E. 3
Jun. Ag. (A)	Chem. 2	Agr. 3	Chem. 4 Biol. 3	Engl. 4	Vet. Sc. 2	Ent. 1 Agr. 4
Jun. Ag. (B)	Chem. 2	Agr. 3 Hort. 3	Chem. 4 Biol. 3	Engl. 4	Vet. Sc. 2	Ent. 1 Agr. 4
Jun. Ag. (C)	Chem. 2	Agr. 3	Chem. 4 Biol. 3	Engl. 4	Vet. Sc. 2	Ent. 1 A. H. 5
Jun. Ag. (D)	Chem. 2	Agr. 3	Chem. 4	Engl. 4	Vet. Sc. 2	D. H. 2
Jun. Arch.	Arch. 30	Arch. 31 Engl. 5	Arch. 34	Chem. 1a	C. E. 6	
Jun. A. E.	Arch. 30	Arch. 31 Engl. 5	Arch. 34	Chem. 1a	C. E. 6	M. E. 3
Jun. Ch. E.	Math. 6	C. E. 7 Engl. 5	Chem. 4	Chem. 5	Ch. E. 1	M. E. 3

Jun. C. E.	**Math. 6**	**C. E. 7** Engl. 5	**C. E. 5**	**Chem. 1a**	**C. E. 6**	**M. E. 3**
Jun. E. E.	**Math. 6**	Engl. 5	**E. E. 3**	**Chem. 1a**	**C. E. 6**	**M. E. 3**
Jun. M. E.	**Math. 6**	**M. E. 5** Engl. 5	**M. E. 6**	**Chem. 1a**	**C. E. 6**	
Jun. T. E.		**T. E. 3** Engl. 5	**Chem. 4**	**T. E. 2**	**T. E. 6**	**T. E. 4**
Senior Ag. (A)	Econ. 1	Biol. 4 Chem. 6 Biol. 6	Agr. 5 Chem. 7 Biol. 5	Agr. 8 **Mil. Sc. 2**	Agr. 6	Agr. 7
Senior Ag. (B)	Econ. 1	Biol. 4 Chem. 6 Biol. 6	Agr. 5 Chem. 7 Biol. 5	Hort. 8 **Mil. Sc. 2**	**Hort. 7** Agr. 6	Agr. 7
Senior Ag. (C)	Econ. 1	A. H. 8 Chem. 6 Vet. Sc. 6	Chem. 7	A. H. 7 **Mil. Sc. 2**	Agr. 6	Agr. 7 Vet. Sc. 7
Senior Ag. (D)	Econ. 1		D. H. 4	Biol. 7 **Mil. Sc. 2**	Agr. 6	A. H. 6
Senior Arch.	Econ. 1		Arch. 40	**Mil. Sc. 2**		C. E. 14
Senior A. E.	Econ. 1	C. E. 18	Arch. 40	**Mil. Sc. 2**	M. E. 5a	C. E. 14
Senior Ch. E.	Econ. 1	**M. E. 5**	**M. E. 6**	Ch. E. 5 **Mil. Sc. 2**	C. E. 15	Ch. E. 6
Senior C. E.	Econ. 1	C. E. 18	C. E. 16	C. E. 13 **Mil. Sc. 2**	C. E. 15	C. E. 17
Senior E. E.	Econ. 1	E. E. 8	C. E. 16	E. E. 10 **Mil. Sc. 2**	M. E. 5a	E. E. 9
Senior M. E.	Econ. 1	M. E. 8		**Mil. Sc. 2**	**Ch. E. 1**	M. E. 7
Senior T. E.	Econ. 1		Chem. 12	T. E. 9 **Mil. Sc. 2**	T. E. 8	T. E. 7
1st Yr. 2-yr. Ag.	**Engl. 9**	**Biol. 15**			**Hort. 15**	**Agr. 15**
1st Yr. 2-yr. T. E.	**Engl. 9**		T. E. 1	**T. E. 2**	**T. E. 6a**	
2nd Yr. 2-yr. Ag.	Engl. 10	Hort. 3	Chem. 20		D. H. 16	Agr. 17
2nd Yr. 2-yr. T. E.	Engl. 10	**T. E. 3**	T. E. 16	T. E. 9a		T. E. 7

Heavy tpye indicates that the examination begins at 1:00 P. M.
Other examinations begin at 8:30 A. M.

EXAMINATION SCHEDULE, SECOND TERM, SESSION 1913-14.

Second Term.	Monday, May 25.	Tuesday, May 26.	Wednesday, May 27.	Thursday, May 28.	Friday, May 29.	Saturday, May 30.
Senior Ag. (A)	Biol. 4 Biol. 5	Agr. 10 **T. E. 5**	Econ. 2	Agr. 6	Biol. 6 Agr. 8 Chem. 6	Agr. 9 Chem. 8
Senior Ag. (B)	Biol. 4 Biol. 5	Hort. 9 **T. E. 5**	Econ. 2	Agr. 6	Hort. 10 Chem. 6 Biol. 6	Hort. 11 Chem. 8
Senior Ag. (C)	Vet. Sc. 4	A. H. 7 **T. E. 5**	Econ. 2	Agr. 6 Vet. Sc. 6	A. H. 9 Chem. 6	Vet. Sc. 7 Agr. 9 Chem. 8
Senior Ag. (D)	Vet. Sc. 4	D. H. 5	Econ. 2	Agr. 6	Biol. 7	Chem. 9
Senior Arch.	Arch. 41		Econ. 2			Arch. 42
Senior A. E.	Arch. 41		Econ. 2			Chem. 10
Senior Ch. E.	Chem. 11	M. E. 5	Econ. 2	Ch. E. 6	M. E. 6	Ch. E. 5
Senior C. E.	C. E. 20		Econ. 2	C. E. 21	C. E. 22	Chem. 10
Senior E. E.	E. E. 11	E. E. 10	Econ. 2	E. E. 9	E. E. 8	M. E. 5a
Senior M. E.		Ch. E. 3	Econ. 2		M. E. 9	M. E. 8
Senior T. E.	T. E. 11	T. E. 10	Econ. 2	T. E. 9	T. E. 8	T. E. 7
2nd Yr. 2-yr. Ag.	Agr. 18	Vet. Sc. 16	Ent. 10	A. H. 18 **A. H. 17**	Engl. 10	Chem. 20
2nd Yr. 2-yr. T. E.	T. E. 11		T. E. 16	T. E. 3	Engl. 10	T. E. 7
	Monday, June 1.	Tuesday, June 2.	Wednesday, June 3.	Thursday, June 4.	Friday, June 5.	Saturday, June 6.
Fresh. Ag.	**Math. 11**	**Biol. 1**	**Phys. 1**	**D. H. 1**	**Hist. 1**	
Fresh. Eng.	**Phys. 3**	**M. E. 2**	**Math. 2**	**Draw. 2**	**Math. 3**	M. E. 1
Fresh. Arch. and A. E.	**Phys. 3**	**Arch. 24**	**Math. 2**	**Draw. 2**	**Math. 3**	M. E. 1
Soph. Ag.	Hort. 2	Engl. 2 **Mil. Sc. 1**	A. H. 4 **A. H. 3**	Chem. 1a	Agr. 2	Biol. 2
Soph. Arch. and A. E.	Arch. 26	Engl. 2 **Mil. Sc. 1**	Math. 5	Phys. 6	Hist. 2	Arch. 27

Soph. Ch. E.	Phys. 4	Engl. 2 **Mil. Sc. 1**	Math. 5	Chem. 1	Hist. 2	
Soph. C. E.	Phys. 4	Engl. 2 **Mil. Sc. 1**	Math. 5		Hist. 2	C. E. 4
Soph. E. E.	Phys. 7	Engl. 2 **Mil. Sc. 1**	Math. 5	Phys. 8	Hist. 2	E. E. 2
Soph. M. E.	Phys. 4	Engl. 2 **Mil. Sc. 1**	Math. 5		Hist. 2	M. E. 4
Soph. T. E.	Phys. 4	Engl. 2 **Mil. Sc. 1**	T. E. 1	Chem. 1a	Hist. 2	M. E. 4
Jun. Ag. (A)	**Ent. 2**	**Engl. 4** Vet. Sc. 3	**Hort. 4**	**Chem. 2**	**Chem. 4** **Agr. 4** **Biol. 3**	Agr. 3
Jun. Ag. (B)	**Ent. 2** Hort. 6	**Engl. 4** Vet. Sc. 3	**Hort. 4** Hort. 5	**Chem. 2**	**Chem. 4** **Agr. 4** **Biol. 3**	Agr. 3
Jun. Ag. (C)	**Ent. 2** Vet. Sc. 5	**Engl. 4** Vet. Sc. 3	**A. H. 5**	**Chem. 2**	**Chem. 4** **Biol. 3**	Agr. 3
Jun. Ag. (D)	Vet. Sc. 5	**Engl. 4** Vet. Sc. 3	**D. H. 3**	**Chem. 2**	**Chem. 4**	Agr. 3
Jun. Arch.		**E. E. 6** Arch. 35	**C. E. 12**	Chem. 1a		Arch. 36
Jun. A. E.	Phys. 7	**E. E. 6** Arch. 35	**C. E. 12**	Chem. 1a	**C. E. 10**	Arch. 36
Jun. Ch. E.	**E. E. 5**	**Ch. E. 3**	**C. E. 7**	**C. E. 6a**	**Chem. 4**	M. E. 4
Jun. C. E.	**E. E. 5**	**C. E. 11**	**C. E. 7**	Chem. 1a	**C. E. 10**	C. E. 9
Jun. E. E.	**E. E. 13**	**C. E. 3**	**E. E. 12**	Chem. 1a	**E. E. 3** E. E. 4	M. E. 4
Jun. M. E.	**E. E. 5**	**M. E. 5**	**C. E. 12**	Chem. 1a	**M. E. 6**	
Jun. T. E.	**E. E. 5**	**T. E. 5**	**T. E. 3**	**T. E. 6**	**Chem. 4**	T. E. 2
1st Yr. 2-yr. Ag.	Hort. 2	**Agr. 16**	**Biol. 16**	**A. H. 16**	**Engl. 9**	
1st Yr. 2-yr. T. E.			**T. E. 1**	**T. E. 6a**	**Engl. 9**	T. E. 2

Heavy type indicates that the examination begins at 1:00 P. M.
Other examinations begin at 8:30 A. M.

DEFICIENCY EXAMINATIONS.

In each term there is held a series of examinations for the removal of deficiencies incurred in the preceding term. These examinations are open only to those who have a term grade D, and to those absent from the regular examination with excuse. Special examinations will in no case be given without Faculty action.

The deficiency examinations for the courses given during the second term of the session of 1912-1913 will be held according to the following

Schedule.

September 22.		September 23.	
8:30 a. m.	1:00 p. m.	8:30 a. m.	1:00 p. m.
Agron. 2 Arch. 3 Biol. 3 C. E. 10 E. E. 4, 5, 6 Engl. 9 Ent. 2 Hort. 2, 6 Math. 11 M. E. 4 Phys. 3, 4, 7 Vet. Sc. 5	Agron. 16 A. H. 3 Arch. 6 Biol. 1 Ch. E. 3 C. E. 3, 11 E. E. 7 Engl. 2 Hist. 2 Hort. 5 M. E. 2, 5 Mil. Sc. 1 T. E. 2, 5 Vet. Sc. 3	Agron. 3 A. H. 4, 5 Arch. 8 Biol. 2, 16 Chem. 2 C. E. 7, 12 D. H. 3 E. E. 3 Engl. 4 Hort. 4 Math. 2, 5 M. E. 1 Phys. 1 T. E. 1, 3	Agron. 4 A. H. 16 Chem. 1, 1a, 4 C. E. 4, 6a, 9 D. H. 1 Draw. 2 E. E. 2 Hist. 1 Math. 3 M. E. 6 Phys. 8 T. E. 6, 6a

GRADUATION.

A diploma of the College, with the degree corresponding to the course of study pursued, will be granted students who complete one of the regular courses and pass satisfactory examinations on all of the branches therein.

No degree will be conferred without a residence of at least one year at the College. The diploma fee is $5.00.

HONORS.

At the end of each session students who have during the year received no term grade below B and have no deficiency in "Practice" are announced as "Distinguished."

ACADEMIC BUILDING.

The Academic Building erected in 1912-1913, is located on the highest part of the campus and occupies the site of the original Main Building which was erected in 1876 and destroyed by fire May 27, 1912. It is 89 feet wide and 260 feet long and four stories high. It provides class and lecture rooms for the department of Mathematics, English, History, Economics, Foreign Languages, and Drawing, and quarters for the administrative offices, the library, and the armory. The building is constructed of brick and reinforced concrete, and is fireproof.

BERNARD SBISA HALL.

This is a one-story, fireproof building erected in 1912, to replace the Mess Hall destroyed by fire in October, 1911. The dining room has a seating capacity of over 1200, and the appointments of the building are modern in every respect.

MECHANICAL ENGINEERING BUILDING.

This building is situated north of the Academic Building and partly houses the Department of Mechanical Engineering. It consists of two distinct parts: First, the one containing the carpenter shop, and section rooms; second, that containing the blacksmith shop, machine shops, wood-turning room, and experimental laboratory. The first mentioned part is a two-story part, having the carpenter shop on the first floor and the other rooms on the second floor. The second part of the building is a one-story structure, containing the departmental equipment belonging to the work therein cared for; also an additionall steam engine which furnishes the power for the shops.

AGRICULTURAL AND HORTICULTURAL BUILDING.

This building, erected in 1899, accommodates the agricultural and horticultural departments of the College by furnishing rooms for class instruction, laboratory investigations, museum purposes, butter and cheese making, pasteurizing milk, seed store room, photographic room, and the necessary offices for the accommodation of these departments. The building is 160 feet long and 77 feet wide, two stories high, and covered with slate. It contains twenty-seven rooms, fitted with apparatus and machinery for the instruction of students in the several branches of agriculture and horticulture.

CHEMICAL AND VETERINARY BUILDING.

This building, erected in 1902, is 138 feet long and 130 feet deep. It is built of brick and contains two stories and a basement. On the first floor the Veterinary Department has its office, veterinary laboratory, students' laboratory, dissecting room, operating room, museum, lecture room and apparatus room. The Chemical Department has on the same floor two store rooms, an assay room and a laboratory for State chemical work.

The second floor comprises the chemical and mineralogical museum, office and private laboratory of the professor of chemistry, two lecture rooms, balance room, two supply rooms and three laboratories for students.

VETERINARY HOSPITAL.

The Veterinary Hospital, erected in 1908, contains a clinic room, 36x36 feet, eigfiht box stalls, four tie stalls, two rooms for dogs, a large colic stall, feed room, medicine room, janitor's room, etc. The muilding is floored with concrete, with traps from each stall to the sewer, thus permitting the proper isolation of contagious diseases and the thorough disinfection of each stall. An automatic flush tank serves to keep the building in a sanitary condition.

TEXTILE BUILDING.

This building, erected in 1904, is constructed of smooth red brick, according to the plans of an expert mill engineer, and is an excellent example of modern cotton mill construction. The construction is of the slow-burning type generally accepted by American engineers as the most satisfactory for cotton manufacturing.

The building is two stories high, 50 feet wide and 180 feet long. The first floor is occupied by the carding and spinning and warp-preparation machinery, and the Professor's office. The second floor is occupied by the weaving and cloth-finishing machinery and by the designing and classrooms, and the offices of the instructors in weaving.

The building is heated throughout by a Webster vacuum system of steam heat, and a complete sprinkling system for fire protection has been installed. The plumbing in the building is perfectly sanitary and typical of the best cotton mill practice.

CIVIL ENGINEERING BUILDING.

This building, erected in 1909, and used to house the departments of Civil Engineering, Architecture, Drawing and Physics, contains eight lecture rooms, five laboratories, five drawing rooms, and several offices and store rooms.

The building is 125 feet wide and 73 feet deep; it has a basement and three stories, is heated by steam and is fireproof.

ELECTRICAL ENGINEERING BUILDING.

This building, erected in 1912, and used to house the departments of Electrical Engineering and Mechanical Engineering, contains thirteen lecture rooms, four laboratories, two drawing rooms, and several offices and store rooms.

It has a basement and three stories; is 125 feet wide by 103 feet deep; is heated by hot water, and is fireproof.

EXPERIMENT STATION BUILDING.

This building, erected 1909, contains offices, laboratories and store rooms for the officers of the Experiment Station.

The building is 115 feet wide and 61 feet deep; it has a basement and two stories, is heated by steam, and is fireproof.

GATHRIGHT HALL.

This building was erected in 1876, and is named in honor of Thomas L. Gathright, the first President of the College. It is being used temporarily for admistrative offices and for section rooms.

PFEUFFER HALL.

This is a dormitory, erected in 1887, and contains twenty-five rooms. It is named in honor of George Pfeuffer, a former President of the Board of Directors.

AUSTIN HALL.

This is a dormitory, erected in 1888, and contains twenty-five rooms. It is named in honor of Stephen F. Austin.

ROSS HALL.

This is a dormitory, erected in 1892, three stories high, with forty-one rooms. It is named in honor of former President L. S. Ross.

FOSTER HALL.

This building was erected in 1899, and is named in honor of former President L. L. Foster. It is a dormitory and consists of three separate parts; the central part is four stories high and contains nineteen rooms; the two ends are three stories high and contain eighteen rooms each.

GOODWIN HALL.

This dormitory was erected in 1908 and named in honor of Hon. G. I. Goodwin. It contains eighty-two rooms and is equipped with a steam heating system and modern toilet facilities.

MILNER HALL.

This building was erected in 1911 and named in honor of President R. T. Milner. It is a dormitory containing one hundred and two rooms. The building is four stories high; there are no connecting stairways between the several floors, but each story has separate entrances so as to divide the buildings into four distinct parts, without interfering with the ventilation in any part of the building. Each story has four shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick and is practically fireproof.

LEGETT HALL.

This building was erected in 1911 and is named in honor of K. K. Legett, a former President of the Board of Directors. It is a dormitory and in every respect a duplicate of Milner Hall.

HARVEY MITCHELL HALL.

This building was erected in 1912, and is named in honor of a former citizen of Bryan, who was largely instrumental in having the College located in Brazos county.

It is a dormitory, having a basement and three stories, and contains eighty-six rooms, each one having an outside exposure. Each story has shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick, and is practically fireproof.

ASSEMBLY HALL.

This is a two-story brick building, erected in 1889, having a main floor and gallery.

NATATORIUM.

This building was erected in 1908 and is thoroughly equipped for shower baths. It contains forty-six dressing rooms, thirty-two stalls supplied with hot and cold water for shower baths, toilet facilities, and rooms for the attendants.

SEWERAGE SYSTEM.

The College is provided with an efficient system of sewers, to which are connected the various barracks, the main building, the agricultural and horticultural hall, the steam plant, the infirmary, the mess hall, and the residences. The outfall of the system is three-fourths of a mile from the nearest College building and nine-tenths of a mile from the nearest recitation hall or barracks building.

FARM BUILDINS.

The farm buildings of the College and Experiment Station are situated to the rear of the main building, and consist of a farm implement building, a mule barn, a general farm barn, a large dairy barn with two silos, each of 200 tons capacity.

OTHER IMPROVEMENTS.

Other improvements comprises a laundry, an ice plant with a daily capacity of five tons, a system of waterworks, an electric light and cold storage plant.

GROUNDS AND GARDEN.

The garden, orchard, barnyards and campus are included in the enclosure to the east of the railroad station. The campus consists of some twenty-five acres of lawn, shrubbery and flowers.

The orchard, vineyard, nursery and garden are located north and east of the Academic building.

FARM.

The farm proper comprises about three hundred and fifty acres. The pastures contain in the neighborhood of two thousand acres, and furnish grazing for the College herds.

LIBRARY.

The College Library was competely destroyed by fire in the burning of the Main Building, May 27, 1912. Through the generosity of friends of the College in Houston it has been possible to make a beginning in its re-establishment. The Library contains 2400 volumes and about 15,000 pamphlets. It is chiefly a library of reference, containing standard and technical works bearing particularly upon lines of study pursued in the College. The greatest possible care has been exercised in the selection of books, so as to include only the latest and most essential books in each line. With the exception of encyclopædias, etc., periodicals and books temporarily reserved for required reading in the several courses, all books are loaned for home use for a period of two weeks with the privilege of renewal. A large number of complimentary periodicals and exchanges are regularly received and the Library subscribes to 77 standard magazines, reviews and technical journals. The leading newspapers of Texas are received and filed.

The Library is a designated depository and receives copies of all the publications of the Federal Government which the Superintendent of Public Documents is authorized to distribute, amounting to more than 1000 bound volumes and pamphlets a year. The greater part of the publications of the U. S. Department of Agriculture are on file and a complete card index for all of these is maintained.

The Library is open six days in the week from 8:30 a. m. to 4:30 p. m.

RELIGIOUS AND MORAL CULTURE.

There is religious service in the chapel every Sunday for the corps of students and the residents of the campus. A Sunday school for Bible study, attendance at which is voluntary, affords additional help in the way of ethical training. Every effort is made through lecture and personal example to develop and protect good morals in the young men attending the institution.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Young Men's Christian Association of the College has an enrollment of about 500 members. It conducts weekly classes on Sunday nights, and Bible study classes, in which about 475 students are enrolled, in the several dormitories on Sunday mornings. It employs a General Secretary, who devotes his entire time to the work.

An Association building to cost about $70,000, is now being erected on the College campus.

ATHLETICS.

The usual forms of athletic sports are permitted, subject to the following regulations:

1. Officers and members of athletic squads or teams which propose to take part in intercollegiate athletics must satisfy the following requirements:

(a) Unless they are of age they must have the written consent of parent or guardian, sent directly by mail to the Dean.

(b) They must be carrying at least eighteen hours per week of work, and must be making passing grades in at least fourteen hours of work. In order that this requirement may be enforced, reports shall be made to the Dean at the end of the first month of the session, and thereafter at bi-weekly intervals during the seasons devoted to the several sports; each report to cover the work from the beginning of the current term to the date of the report.

(c) In their last term of attendance they must have passed in at least fourteen hours of work. Absence for one or more terms shall not vitiate this rule.

(d) They must not have been absent without excuse from class or other required college duties more than six times during the current term.

2. Withdrawal from College in the course of any term for any cause except sickness shall debar from participation in intercollegiate athletics until the work of that term shall have been successfully completed by students so withdrawing.

3. Officers and members of the football team shall not be allowed to be absent on trips more than eight working days; of the baseball team, more than eight; of the track team, more than six; of the basketball team, more than six. If a student is a member of more than one organization, his absences on such trips shall not be more than twelve working days in a session.

Members of teams shall be responsible to the Physical Director or his representatives for regular attendance at athletic practice, and for their conduct while at athletic practice and while on trips.

Thirty-six members of the football squad, twenty-four of the baseball squad, fifteen of the track squad and twelve of the basket ball squad are excused from drill during the respective seasons; the duration of the exemption to be determined by Dean and the Commandant.

The Faculty Committee on Athletics is intrusted with the general oversight of athletics, and the Physical Director will submit to this committee all schedules and contracts for intercollegiate contests.

BAND.

An attractive feature is a regularly organized cadet band. Under the direction of a leader employed by the College, it furnishes music for occasions of social and military importance, gives open-air concerts in season, leads the regiment in marching to dinner, and plays at guard mounting and dress parade.

AFFILIATED SCHOOLS.

The Faculty, with the desire to bring the College into closer relation with the schools of the State, has provided that graduates of approved schools shall be admitted to the College on diploma or certificates *at the beginning of the session* without examination. Superintendents who desire to have their schools enrolled among the affiliated schools are invited to examine the requirements for admission, and the specimen examination questions in the appendix.

The offer of affiliation is made upon the following terms: The superintendent of a school desiring affiliation should obtain from the Registrar of the College a form of application to be filled out and returned. If the application should be approved by the Faculty, the superintendent will be notified and the name of the school and that of the superintendent enrolled in the catalogue. The privilege of affiliation will be withdrawn from any school whose graduates show a lack of thoroughness in their preparation for the work of the College.

Catalogues of the College will be sent regularly to superintendents of affiliated schools, and they in turn will be expected to send the Dean copies of their reports or catalogues.

ENTRANCE EXAMINATIONS AT AFFILIATED SCHOOLS.

Examination for admission to the Freshman class will be held at affiliated schools upon request of the Superintendent or Principal. Such examinations will be governed by the following regulations:

1. Not later than May 20 the Dean will send under seal, entrance examination questions to affiliated schools which have applied for them.
2. The examinations will be held at such places as the examiners may appoint.
3. The dates for the examinations in 1914 will be as follows:

Monday, May 25, 9 a. m., Algebra; 3 p. m., History. Tuesday, May 26, 9 a. m., Geometry; 3 p. m., English.

4. The examiner may charge each applicant a fee of $1.00, to be retained by the examiner.
5. The examiner shall open the sealed envelopes containing the examination questions in the presence of the applicants.
6. The answers shall be written in ink or on legal cap paper, on one side only, and the paper shall close with a pledge that no aid has been given or received.
7. The examination on any one subject shall not continue more than three hours.
8. As soon as the series of examinations is completed, the examiner shall forward the papers to the Dean with a certificate that the examinations have been conducted fairly and in accordance with these regulations.

LIST OF AFFLIATED SCHOOLS.

Name.	Superintendent.	Location.
J. M. Abbott's High School	J. M. Abbott	San Angelo.
Abilene High School	J. H. Burnett	Abilene.
Albany High School	M. I. Miles	Albany.
Alexander Collegiate Institute	F. E. Butler	Jacksonville.
Alice Public School	W. C. Ogier	Alice.
Allen Academy	J. H. and R. O. Allen	Bryan.
Alpine	G. W. Page	Alpine.
Alvarado High School	S. E. Watson	Alvarado.
Alvin Public School	R. R. Sebring	Alvin.
Alvord Public School	J. Arthur Tibbetts	Alvord.
Alto Public School	J. M. Cook	Alto.
Amarillo Public School	S. M. Byrd	Amarillo.
Angleton High School	J. B. Oliver	Angleton.
Anna High School	W. L. Roper	Anna.
Anson High School	J. W. Grissom	Anson.
Arlington Public School	H. Tarpley	Arlington.
Aspermont Public School	T. L. Hiner	Aspermont.
Athens High School	I. P. Skinner	Athens.
Atlanta High School	J. B. McClung	Atlanta.
Aubrey High School	J. T. Teel	Aubrey.
Austin High School	A. N. McCallum	Austin.
Axtell High School	C. C. Cross	Axtell.
Baird Public School	R. D. Green	Baird.
Ball High School	J. W. Hopkins	Galveston.
Ballinger High School	W. S. Fleming	Ballinger.
Barnett School, The	W. W. Barnett	Houston.
Bastrop Public School	W. P. Arnold	Bastrop.
Bay City High School	R. E. Scott	Bay City.
Beaumont High School	H. F. Triplett	Beaumont.
Beeville High School	W. E. Madderra	Beeville.
Bellevue High School	Nolan T. Gaines	Bellevue.
Bellville High School	C. N. Shaver	Bellville.
Belton Academy	C. H. Wedemeyer	Belton.
Belton High School	L. H. Hubbard	Belton.
Big Foot Public School	D. M. Henry	Big Foot.

Name.	Superintendent.	Location.
Big Sandy Public School	A. M. W. Smith	Big Sandy.
Big Springs High School	J. W. Dees	Big Springs.
Blanco High School	T. B. Bailey	Blanco.
Blanket High School	D. F. Eaton	Blanket.
Blinn Memorial College	J. L. Neu	Brenham.
Blossom High School	Dexter Diffie	Blossom.
Blum High School	C. F. Christensen	Blum.
Boerne High School	R. J. Kepke	Boerne.
Bonham High School	I. W. Evans	Bonham.
Bowie High School	E. G. Alexander	Bowie.
Brackett High School	D. E. McArthur	Brackettville.
Brady High School	R. H. Long	Brady.
Brandon High School	J. D. Mayo	Brandon.
Breckenridge Public School	J. R. Smith	Breckenridge.
Bremond High School	H. E. Blythe	Bremond.
Brenham High School	W. D. Notley	Brenham.
Britton's Training School	O. L. Britton	Cisco.
Brookston High School	J. H. English	Brookston.
Brownsville Public School	C. H. Hallmark	Brownsville.
Brownwood High School	G. H. Carpenter	Brownwood.
Bryan Baptist Academy	R. McDonald	Bryan.
Bryan High School	W. C. Lawson	Bryan.
Buda High School	J. E. Watkins	Buda.
Buffalo High School	R. O. Bennett	Buffalo.
Buna High School	A. D. Rawlinson	Buna.
Burleson High School	Clyde Howard	Burleson.
Burnet High School	M. B. Brown	Burnet.
Caldwell High School	J. M. Smith	Caldwell.
Calvert High School	I. N. Stevens	Calvert.
Cameron High School	J. E. Watts	Cameron.
Canyon School	Thos. J. Yoe	Canyon.
Carbon High School	L. L. Burney	Carbon.
Carlisle Military Academy	J. M. Carlisle	Arlington.
Carlton Public School	W. A. O'Quinn	Carlton.
Carney Graded School	E. A. Caldwell	O'Brien.
Carthage High School	A. J. Holmes	Carthage.
Cedar Hill Public School	G. R. Adkins	Cedar Hill.
Celeste Public School	Robt. L. Dudney	Celeste.
Celina Public School	C. T. Cobb	Celina.
Center High School	M. M. Dupre	Center.
Channing Public School	J. F. Smith	Channing.
Chapel Hill High School	W. R. Kennedy	Chapel Hill.
Childress High School	W. H. Wooddey	Childress.
Chillicothe Public School	Robt. L. Dudney	Chillicothe.
Cisco High School	J. N. Johnston	Cisco.
Clarksville High School	R. C. Campbell	Clarksville.
Claude High School	W. L. Bates	Claude.
Clayton Rural High School	J. O. Lowe	Clayton.
Cleburne High School	R. G. Hall	Cleburne.
Clifton High School	J. M. Bettis	Clifton.
Clyde Public School	J. B. Shannon	Clyde.
Coleman Public School	J. E. Hickman	Coleman.
Collinsville High School	E. R. Benedict	Collinsville.
Colorado High School	W. W. Hart	Colorado.
Columbus High School	B. T. Gillespie	Columbus.
Comanche High School	R. F. Holloway	Comanche.
Conroe High School	W. C. Hanna	Conroe.
Cookville Public High School	H .H. J. Fling	Cookville.
Cooper High School	J. H. Newton	Cooper
Copperas Cove High School	J. M. Witcher	Copperas Cove.
Coronal Institute	Sterling Fisher	San Marcos.
Corpus Christi High School	C. W. Crossley	Corpus Christi.
Corsicana High School	J. E. Blair	Corsicana.
Coryell City School	Boone Huddleston	Coryell.
Cotulla High School	R. A. Taylor	Cotulla.
Crawford High School	B. C. Dyess	Crawford.
Cresson Public School	C. E. Bloss	Cresson.
Crockett High School	Donald McDonald	Crockett.
Crowell Public School	E. W. Muse	Crowell.
Cumby Public School	C. E. McGuire	Cumby.
Dalhart High School	G. R. Kelly	Dalhart.
Dallas High School	James A. Brooks	Dallas.
Dawson Public School	E. W. Tarrant	Dawson.
Decatur High School	H. P. Barton	Decatur.
D'Hanis High School	J. L. Williams	D'Hanis.
De Leon High School	J. S. Carroll	De Leon.
Del Rio Public School	W. F. Jourdan	Del Rio.
Denison High School	F. B. Hughes	Denison.
Denton High School	J. S. Carlisle	Denton.
Deport Public School	Geo. W. Webb	Deport.
Detroit Public School	W. I. Woodson	Detroit.
Devine High School	W. H. Adamson	Devine.
Dodge School	E. A. Bennick	Dodge.
Donna High School	J. F. M. Stephens	Donna.

Name.	Superintendent.	Location.
Douglas Select School	S. A. Douglas	Waco.
Dublin High School	J. W. Dunlap	Dublin.
Duffau High School	John Purvis	Duffau.
Dunn Public School	O. L. Howell	Dunn.
Durango Public School	Mrs. N. F. Alsup	Durango.
Eagle Lake High School	J. H. Morgan	Eagle Lake.
Eagle Pass High School	W. S. Bliss	Ealge Pass.
Eastland Public School	N. A. Cox	Eastland.
Eden High School	D. C. Broyles	Eden.
Edgewood High School	T. R. Howard	Edgewood.
Edna High School	J. W. Bagby	Edna.
El Campo Public School	A. W. Griggs	El Campo.
Elgin High School	Buckner Harris	Elgin.
El Paso High School	N. R. Crozier	El Paso.
Ennis High School	J. D. Coghlan	Ennis.
Evant High School	D. B. Burrows	Evant.
Farmersville High School	W. E. Foster	Farmersville.
Flatonia High School	M. A. McDonald	Flatonia.
Florence High School	I. A. Hicks	Florence.
Floresville High School	W. B. Toone	Floresville.
Floydada Public School	F. E. Savage	Floydada.
Fort Davis High School	A. B. Tyson	Fort Davis.
Fort Worth High School	J. W. Cantwell	Fort Worth.
Franklin Public School	W. C. Crane	Franklin.
Franfort Independent School	Miss Mary Brown	Frankston
Franklin Institute		Mount Vernon.
Fredericksburg High School	Wm. Dietel	Fredericksburg.
Frisco Public School	I. I. Isbell	Frisco.
Frost High School	L. C. Stockard	Frost.
Gainesville High School	J. P. Glasgow	Gainesville.
Garland High School	S. M. Loyd	Garland.
Gatesville High School	G. W. Harris	Gatesville.
Georgetown High School	J. W. Clark	Georgetown.
Giddings Public School	T. P. Walker	Giddings.
Gillespie School	J. B. Jones	Knox City.
Gilmer High School	I. A. Costan	Gilmer.
Gladewater High School	S. D. Pearce	Gladewater.
Glen Rose High School	R. E. McDonald	Glen Rose.
Godley High School	L. I. Smith	Godley.
Goldthwaite High School	A. J. Street	Goldthwaite.
Goliad Public School	T. S. Cox	Goliad.
Gonzales Public School	W. E. Taylor	Gonzales.
Gordon High School	C. E. Maxwell	Gordon.
Goree Graded School	A. L. Hardgrave	Goree.
Gorman Public School	J. E. Smith	Gorman.
Graham High School	Edgar McLendon	Graham.
Grandbury High School	R. P. Jarrett	Grandbury.
Grand Prairie High School	J. A. Whitener	Grand Prairie.
Grand Saline School	J. W. Talkington	Grand Saline.
Grandview Public School	N. O. Robbins	Grandview.
Granger High School	T. P. Mallard	Granger.
Grapeland Public School	W. L. Price	Grapeland.
Grapevine High School	P. D. Kennamer	Grapevine.
Greenville High School	L. C. Gee	Greenville.
Groesbeck High School	J. F. Henson	Groesbeck.
Groveton High School	L. J. Frizzell	Groveton.
Hallettsville Public School	K. A. Jones	Hallettsville.
Hamilton High School	G. J. Mason	Hamilton.
Hamlin Public School	K. C. Spratlen	Hamlin.
Hankin's Normal College	J. H. Hankin	Gorman.
Hardin School for Boys	J. A. Hardin	Dallas.
Haskell High School	R. J. Turrentine	Haskell.
Hearne High School	W. A. Holland	Hearne.
Hempstead Public School	J. H. Naff	Hempstead.
Henderson High School	P. B. Bittle	Henderson.
Henrietta High School	S. R. Terry	Henrietta.
Hewitt Public School	J. L. Smith	Hewitt.
Hico Graded School	P. B. Peterson	Hico.
Hillsboro High School	T. D. Brooks	Hillsboro.
Holland High School	J. W G. Meadows	Holland.
Hondo High School	T. C. Hickman	Hondo.
Honey Grove High School	W. L. Willis	Honey Grove.
Houston Heights High School	L. W. Greathouse	Houston Heights.
Houston High School	P. W. Horn	Houston.
Howe Public School	S. B. Sivells	Howe.
Huckaby Public School	O. E. Covey	Huckaby.
Hutto High School	T. G. Coger	Hutto.
Iowa Park Public School	J. A. Ramsey	Iowa Park.
Italy High School	E. W. Rehy	Italy.
Itasca High School	G. L. Marshall	Itasca.

Name.	Superintendent.	Location.
Jacksboro High School	L. Z. Timmons	Jacksboro.
Jacksonville Public School	B. J. Albritton	Jacksonville.
Jefferson High School		Jefferson.
Jewett High School	J. T. Alexander	Jewett.
John C. French High School	M. V. Peterson	Cuero.
Johnson City High School	O. R. Hewett	Johnson City.
Junction High School	D. F. McCollum	Junction.
Karnes City High School	A. V. McClothing	Karnes City.
Kaufman Public School	O. P. Norman	Kaufman.
Kemp Public School	H. F. Moore	Kemp.
Kenedy High School	R. W. Bennett	Kenedy.
Kennard High School	W. M. Anderson	Kennard.
Kennard Mills High School	J. T. Cook	Ratcliff.
Killeen High School	M. P. Dalton	Killeen.
Kirbyville High School	R. W. Persous	Kirbyville.
Kosse High School	J. R. Atkins	Kosse.
Kyle High School	Henry R. Moore	Kyle.
Ladonia Public School	C. G. Yarborough	Ladonia.
LaGrange High School	W. J. Kirk	LaGrange.
Lamesa Public School	D. C. Ashmore	Lamesa.
Lampasas High School	G. D. Scott	Lampasas.
Laneville High School	C. A. Jay	Laneville.
La Porte Public School	James A. Kelley	La Porte.
Laredo High School	L. J. Christen	Laredo.
Laredo Seminary	Miss N. E. Holding	Laredo.
Lawrence Public School	A. N. Brown	Lawrence.
Leander Public School	J. A. Hudson	Leander.
Ledbetter Public School	A. H. Wilcox	Ledbetter.
Leesville Public School	W. R. Muir	Leesville.
Leonard High School	C. T. Speed	Leonard.
Lewisville Academy	Herbert C. Lyon	Lewisville.
Lexington Public School	E. Mackintosh	Lexington.
Liberty Normal and Business College	H. W. Stevenson	Liberty.
Lindale High School	James O'Keefe	Lindale.
Lipan Public School	Amos Bennett	Lipan.
Livingston High School	J. C. Wright	Livingston.
Llano High School	J. G. Toland	Llano.
Lockhart High School	Cuthbert Spencer	Lockhart.
Lockney Public School	E. C. Nix	Lockney.
Lometa Public School	J. Weir	Lometa.
Lone Oak High School	C. J. Denton	Lone Oak.
Longview High School	S. J. Blocker	Longview.
Lott Public School	W. F. Turner	Lott.
Louise Public School	Miss Almena Sublett	Louise.
Lovelady High School	W. H. Tomme	Lovelady.
Lubbock High School	J. K. Wester	Lubbock.
Lufkin High School	S. W. Derrickson	Lufkin.
Luling High School	J. W. Peeler	Luling.
Lutheran College	F. W. C. Jesse	Clifton.
McGregor High School	H. P. Walker	McGregor.
McKinney High School	J. H. Hill	McKinney.
Madison Academy	M. L. Bennett	Madisonville.
Manor Public School	W. T. Pollard	Manor.
Mansfield High School	A. V. Byrd	Mansfield.
Marble Falls Academy	A. S. J. Steel	Marble Falls.
Marfa High School	H. B. Griffin	Marfa.
Marlin High School	W. F. Doughty	Marlin.
Marshall High School	B. B. Cobb	Marshall.
Marshall Training School	N. J. Marshall	San Antonio.
Mart Public School	W. E. Patty	Mart.
Martindale High School	T. A. Fisher	Martindale.
Mason Public School	F. A. Koenig	Mason.
Masonic Industrial School	S. B. Bedinger	Fort Worth.
Medina High School	L. C. Ingram	Medina.
Memphis High School	T. A. Taggart	Memphis.
Menardville High School	H. B. Cowles	Menardville.
Meridian College	G. F. Winfield	Meridian.
Meridian High School	R. N. Smith	Meridian.
Merkel High School	W. R. Craigbaum	Merkel.
Mesquite High School	W. J. Berry	Mesquite.
Mexia High School	E. B. Stover	Mexia.
Midland High School	W. W. Lackey	Midland.
Midlothian High School	M. H. Morris	Midlothian.
Miles Public School	J. H. Head	Miles.
Milford High School	S. E. Green	Milford.
Mineola High School		Mineola.
Mineral Springs Institute	W. B. Hargis	Garrison.
Mineral Wells Public School	E. O. McNew	Mineral Wells.
Moody Public School	M. R. Nelson	Moody.
Montague School	R. L. Shults	Montague.
Montgomery Public School	T. J. Payne	Montgomery.
Morgan Public School	T. S. Benton	Morgan.
Morgan's Mill Public School	A. C. Johnson	Morgan's Mill.

Name.	Superintendent.	Location.
Moscow Public School	W. M. Anderson	Moscow.
Mount Calm High School	C. A. Middleton	Mount Calm.
Mount Enterprise School	N. C. Chaney	Mount Enterprise.
Mount Pleasant High School	G. P. Blackburn	Mount Pleasant.
Mount Vernon Public School	W. G. Shipp	Mount Vernon.
Munday Public School	A. J. Bunts	Munday.
Muskogee High School	E. S. Monroe	Muskogee, Okla.
Nacogdoches High School	R. F. Davis	Nacogdoches.
Naples High School	C. B. Christian	Naples.
Navasota High School	J. T. Davis	Navasota.
Nevada High School	F. Z. T. Jackson	Nevada.
New Boston High School	H. C. Somerville	New Boston.
New Braunfels High School	B. Holecamp	New Braunfels.
Nocona Public School	F. F. Mace	Nocona.
Normangee High School	T. W. Brown	Normangee.
North Fort Worth Public School	M. H. Moore	N. Fort Worth.
Oakwood Public School	R. H. Bing	Oakwood.
Odessa Public School	W. V. Harrison	Odessa.
Oenaville Public School	H. H. Goodman	Oenaville.
Olney High School	W. A. Cain	Olney.
Orange High School	J. E. Binkley	Orange.
Overton Public School	G. G. Hassell	Overton.
Paducah High School	N. C. Chaney	Paducah.
Palacios High School	W. C. Gray	Palacios.
Palestine High School	Walker King	Palestine.
Palo Pinto Academy	H. T. Beckworth	Palo Pinto.
Paris High School	J. G. Wooten	Paris.
Park Public School	J. I. Wheeler	Nash.
Pasadena Public School	Miss Ella Wood Hill	Pasadena.
Peacock Military College	Wesley Peacock	San Antonio.
Pearsall Public School	S. G. Turner	Pearsall.
Pecos City High School	D. S. Robbins	Pecos City.
Pennington College	T. R. Allen	Justin.
Pilot Point Public School	A. B. Weisner	Pilot Point.
Pittsburg High School	C. L. Turner	Pittsburg.
Plainview High School	Miss Ellen Robinson	Plainview.
Plano High School	C. F. Walker	Plano.
Pleasanton Public School	Josiah Bixler	Pleasanton.
Port Arthur High School	J. H. Bright	Port Arthur.
Port Lavaca High School	J. E. Briggs	Port Lavaca.
Proctor Public School	M. P. Chambers	Proctor.
Purves High School	O. B. Rollins	Purves.
Quanah High School	J. W. O'Banion	Quanah.
Queen City Public School	Drew Porter	Queen City.
Quinlan High School	E. H. Watson	Quinlan.
Ranger Public School	J. E. Settle	Ranger.
Ravenna Public School	F. A. Spencer	Ravenna.
Richardson High School	J. W. Arnold	Richardson.
Richland Grammar School	Mrs. E. L. Moncrief	Richland.
Richmond High School	J. M. Patton	Richmond.
Riesel High School	T. S. Whitlock	Riesel.
Rising Star Public School	J. E. Wickham	Rising Star.
Robert Lee Public School	L. E. Crutcher	Robert Lee.
Rockdale Public School	C. G. Green	Rockdale.
Rock Island High School	J. H. Dufner	Rock Island.
Rockport Public School	H. O. Norwood	Rockport.
Rock Springs High School	J. H. Kile	Rock Springs.
Rockwall High School	J. E. Shelton	Rockwall.
Roscoe Public School	C. C. Shaver	Roscoe.
Rosebud Public School	B. F. Sisk	Rosebud.
Rosenberg High School	V. L. Peterson	Rosenberg.
Rotan Public School	L. L. Price	Rotan.
Royse City High School	Walter Platt	Royse City.
Runge High School	M. F. Hall	Runge.
Rusk Public School	Ed. Singletary	Rusk.
Saint Jo School	J. E. Park	Saint Jo.
Sam and Will Moore Institute	Geo. Baur	Moulton.
San Angelo High School	Felix E. Smith	San Angelo.
San Antonio Academy	W. W. Bondurant	San Antonio.
San Antonio High School	C. J. Lukin	San Antonio.
San Augustine High School	W. H. Rushing	San Augustine.
Sanderson High School	J. J. Allen	Sanderson.
San Diego High School	D. B. Burrows	San Diego.
Sanger High School	R. Compton	Sanger.
San Marcos High School	G. M. Sims	San Marcos.
San Saba High School	E. S. Repp	San Saba.
Santa Anna High School	Z. D. Jones	Santa Anna.
Scranton High School	S. P. Collins	Scranton.
Sealy High School	S. S. Boutwell	Sealy.
Seguin High School	R. E. L. Adams	Seguin.

Name.	Superintendent.	Location.
Seymour Public School	W. E. Edelen	Seymour.
Sherman High School	J. C. Pyle	Sherman.
Shiner Public School	T. J. Ponton	Shiner.
Sidney Public School	J. F. Redwine	Sidney.
Sims School for Boys	J. G. Sims	Fort Worth.
Skidmore Public School	J. J. Jenkins	Skidmore.
Slidell High School	W. E. Hutchins	Slidell.
Smith School	Landon F. Smith	Pittsburg.
Smithville High School	J. N. Bigbee	Smithville.
Snyder High School	H. E. Gable	Snyder.
Sonora High School	J. A. Woodford	Sonora.
Sour Lake High School	W. H. Bodenheimer	Sour Lake.
Springtown High School	A. S. Johnston	Springtwon.
Spur Public School	S. W. Adams	Spur.
Stamford High School	J. P. Comer	Stamford.
State Institute for Blind	E. E. Bramlette	Austin.
State Orphan High School	W. L. Bringhurst	Corsicana.
Stephenville Public School	Henry Sims	Stephenville.
Sterling City Public School	B. F. Bennett	Sterling City.
Stratford High School	B. H. Taylor	Stratford.
Strawn High School	L. T. Cook	Strawn.
Sulphur Springs High School	F. V. Garrison	Sulphur Springs.
Summer Hill Select School	L. G. Sumerell	Omen.
Sweetwater High School	M. B. Johnson	Sweetwater.
Talpa Public School	W. W. Wooten	Talpa.
Taylor High School	J. F. O'Shea	Taylor.
Temple High School	J. F. Kimball	Temple.
Teneha Academy	D. A. Leak	Teneha.
Terrell High School	S. M. N. Marrs	Terrell.
Texarkana High School	O. L. Dunaway	Texarkana.
Thomas Arnold High School	S. J. Jones	Salado.
Timpson High School	J. B. Ramsey	Timpson.
Tioga High School	J. A. Giles	Tioga.
Tivy High School	Alvin Dille	Kerrville.
Tolar High School	C. A. Ward	Tolar.
Trinity High School	J. W. Bright	Trinity.
Troup High School	C. A. Lanier	Troup.
Tyler County High School	E. W. Tubb	Woodville.
Tyler High School	W. T. Adams	Tyler.
Uvalde High School	A. W. Evans	Uvalde.
Valentine Public School	Herman Wofford	Valentine.
Valley Mills High School	A. R. Roach	Valley Mills.
Van Alstyne High School	W. F. Barnett	Van Alstyne.
Velasco High School	J. H. DeFee	Velasco.
Venus High School	W. F. Griswold	Venus.
Vernon Public School	B. F. Holcomb	Vernon.
Victoria High School	Miss Alice C. Dean	Victoria.
Waco High School	J. C. Lattimore	Waco.
Waelder Public School	A. V. Peterson	Waelder.
Wallis Public School	Mrs. L. Barnhill	Wallis Station.
Walnut Springs Public School	W. W. Battle	Walnut Springs.
Waxahachie High School	G. B. Winn	Waxahachie.
Weatherford College Training School	F. D. Cavaness	Weatherford.
Weatherford High School	T. W. Stanley	Weatherford.
Weimar Institute	H. R. Bolton	Weimar.
West High School	A. L. Deveney	West.
West Texas Military Academy	Angus McD. Crawford	San Antonio.
White, William L., Public School	W. C. Carrell	Lancaster.
Whitesboro High School	G. W. Acton	Whitesboro.
Whitney Public School	A. D. Clark	Whitney.
Wichita Falls High School	T. L. Toland	Wichita Falls.
Willie Denton College	H. P. Warren	Joshua.
Wills Point High School	E. Core	Wills Point.
Winnsboro High School	J. H. Sheppard	Winnsboro.
Winters Public School	J. W. Lewis	Winters.
Wolfe City High School	E. F. King	Wolfe City.
Wortham High School	D. E. Dean	Wortham.
Wylie High School	J. W. Teasley	Wylie.
Yoakum High School	C. A. Peterson	Yoakum.
Yorktown High School	N. Wilson	Yorktown.
Zephyr High School	J. D. Shaw	Zephyr.

CATALOGUE OF STUDENTS.

SCHOOL OF AGRICULTURE.

Graduate Students.

Moore, James Munroe	Fayette, Ala.
B. S., Alabama Polytechnic Institute, 1912.	
Patterson, John Carr	Clarendon.
B. S., A. & M. College of Texas, 1912.	

Total, 2.

Seniors.

Bower, Luther Jasper	Stephenville.
Boswell, Douglas Byron	San Antonio.
Caldwell, Robert Ezekiel	Bryan.
Cardwell, Walter Wilcox	Lockhart.
Graduate Lockhart High School.	
Chewning, James Walter	Goodlett.
Connellee, Earn Tindall	Eastland.
Cowart, Ira Ellis	San Antonio.
Cox, Romie Willis	Childress.
Culbertson, Joe L	Waxahachie.
Dowell, Horace Bartlett	McKinney.
Eagleston, Edward Granville	Smithville.
Graduate Carlisle Military Academy.	
Egan, John Thomas	Denton.
Ehlinger, Rancier Burt	College Station.
Eversberg, Eugene August	Brenham.
Hall, George Graham	Houston.
Harrison, Ervin William, Jr	Greenville.
Jackson, Jesse Wilburn	Kosse.
James, Meredith Haddon, Jr	Bryan.
Graduate Allen Academy.	
Joplin, John Finley	Sipe Springs.
Graduate Kerens High School.	
Kelly, Charles Patrick	New York, N. Y.
Kennedy, Bruce Rankin	Greenville.
Graduate Greenville High School.	
Laake, Ernest William	New Ulm.
Lane, Grady J	Valley Mills.
Langdon, Young Mitchell	Hutchins.
Lockett, William Richard	Cleburne.
Graduate Cleburne High School.	
Lochridge, Charles Frank	Iowa Park.
Lodal, Martin Gorman	Gordon.
Lown, Franklin David	Thornton.
Miller, Richard Sandford	San Saba.
Miller, William Zachary	College Station.
O'Conor, Daniel	Laredo.
Ohlendorf, Walter	Lockhart.
Oliver, Clarence	Lampasas.
Graduate Lampasas High School.	
Roberts, Clay Adlai	Beaumont.
Graduate Beaumont High School.	
Scofield, James Arthur	Hillsboro.
Steel, Wallace W	Weatherford.
Stevens, Dillon Tarrant	St. Louis, Mo.
Stone, James Milton	Houston.
Taylor, Albion Burne	Burnet.
Thomson, Jasper McDonald	Florence.
Graduate Florence High School.	
Tolbert, Weimer Sidney	Miami.

Wallis, Turner Thomas	Cuero.
Weinert, Herbert George Henry	Geronimo.
Whitfield, Charles Austin	San Angelo.
Young, Marvin Hooper	Montgomery.

Total, 45.

Juniors.

Altgelt, George Adolph	San Antonio.
Ayers, Edd Lee	DeLeon.
Ball, Bertus Clyde	Mansfield.
Beasley, Wyatt Gustie	Cleburne.
Boyett, Douglass Chilton	Bryan.
Bradley, Earl Iven	Memphis.
Graduate Memphis High School.	
Brundrett, Harold M	Mesquite.
Buchanan, Harry Hines	Houston.
Clegg, Jake Barnes	Trinity.
Graduate Trinity High School.	
Courtney, Olden Key	Pettus.
Crockett, William Edwin	Prosper.
Dodson, Alfred Ewing	Petersburg.
Everett, George Dudley	Dallas.
Graduate Dallas High School.	
Fisher, John Kerwin Godfrey	Fort Worth.
Gardner, William Bradford	Falfurrias.
Graduate Falfurrias High School.	
Gibbens, Ernest	Kerrville.
Girardeau, Edward Reed, Jr	Galveston.
Graduate Ball High School.	
Goodwin, James Calvin	Beaumont.
Green, Roy	Floydada.
Hanna, Russell Samuel	Denison.
Hoepfner, Fred	Houston.
Irby, Arthur H	Beaumont.
Graduate Beaumont High School.	
James, Oregon Jewell	Monclova, Coah., Mex.
Jenson, John Christen	Coolidge.
Jordan, Gilbert Frederick	Fredericksburg.
Killough, David Thornton	Galveston.
Lane, George Irvine	Valley Mills.
Lenert, August Albert	LaGrange.
Graduate LaGrange High School.	
McDowell, John Clifton	Trinity.
Graduate Groveton High School.	
McGinnis, Perry Templeton	Terrell.
Melton, William Briscoe	Arden, N. C.
Miller, Arthur Charles	New Ulm.
Parr, Virgil Verser	Waelder.
Pendleton, George Clark	Farmersville.
Phillips, Frank Roy	Hebron.
Pumphrey, John Boyce, Jr	Taylor.
Reed, William Neal	Sterling City.
Graduate Sterling City Public School.	
Rich, Lucian Guy	Forest.
Sanford, Roger Allen	Eagle Pass.
*Schiller, William Burton	Burlington.
Simpson, John N	Aledo.
Snider, James Bailey	Walnut Springs.
Sparkman, Frank Alvin	Sterling City.
Graduate Sterling City Public School.	
Stelzig, Elo Henry	Fayetteville.
Stroud, Milton Lee	Kaufman.
Tanner, Edward Livingston	San Antonio.
Templeton, Clive	San Antonio.
Thomson, Alexander Spotswood	Lockhart.

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*Deceased.

Warren, Cleon Barnes	Hewitt.
Washington, Walter Harris	Austin.
Waterhouse, Walter Howard	San Antonio.

Total, 51.

Sophomores.

Adriance, Guy Webb	Bryan.
Allen, Roderick Random	Palestine.
Bailey, Prince Arthur Frederick	Lott.
Barraco, Victor Anthony	Houston.
Beckmann, Albert Erhard	San Antonio.
Bosque, Robert Edward	Corsicana.
Graduate State Orphan's High School.	
Broun, Thomas Rogers	Greenwood.
Brown, Frank Marvin	Orange.
Brown, Leslie Walter	Mathis.
Bruton, David Derden	Comanche.
Bugbee, John Sherman	Clarendon.
Burges, Austin Earl	Dallas.
Campbell, Archibald Raymond	Plano.
Graduate Plano High School.	
Cherry, Thomas Graves	Giddings.
Graduate Giddings Public School.	
Clark, Samuel Finis	Hico.
Graduate Hico Graded School.	
Cochran, Clyde Vernon	Harwood.
Coleman, William Cowles	Athens.
Collins, Jack Clarence	Channing.
Graduate Channing Public School.	
Cowgill, Samuel Paul	San Benito.
Craig, William C., Jr	Brownsville.
Crow, Floyd Arnold	Waco.
Davis, Charles J	Corsicana.
Graduate Corsicana High School.	
Dodd, Grover Cleveland	Rosalie.
Graduate Dodd City High School.	
Donoho, Devada Lewis	George.
Eagleston, Charles Moulton Clark	Smithville.
Eckhardt, Robert William	Yorktown.
Eiland, Ernest Ralph	Rockdale.
Ellis, Howard Ferguson	Abbott.
Eschenburg, Arthur Carl	Floresville.
Francis, William Bebb	College Station.
Graduate Allen Academy.	
Gammill, Harold Harper	Bryan.
Graham, Cyrus Earl	Bryan.
Griffin, Henry Lawton	Henderson.
Gunn, Clifton Henry	Waelder.
Haller, Clarence Francis	Victoria.
Hanson, Wrathall King	San Antonio.
Hausser, Charles	Eagle Pass.
Hector, Wallace Bryan	Alpine.
Henderson, John Marion	Waelder.
Hill, Martin Elmo	Eastland.
Hill, Robert Allen	Brownwood.
Hinds, James Herbert	Bullard.
Holloway, Louis Edward	Dallas.
Hudson, Charles Britton	Bryan.
Hudson, Gay	Celeste.
Japhet, Alfred Kapp	Houston.
Jennings, Edgar Petty	Martindale.
Graduate Martindale High School.	
Jones, E. C	San Antonio.
Jones, Lafayette Poindexter	Temple.
Keith, Henry Haywood	Beaumont.

Kendrick, James Marcellus	Waco.
Graduate Douglas Select School.	
Kincheloe, James Matson	Hubbard.
Kinnard, Albert William, Jr	Bryan.
Klug, Harry Veatch	Dearborn.
Knolle, Miles	Industry.
Lambert, Homer G	San Antonio.
Loring, Martin David	Mason.
McCollum, Hollie Travis	Valley View.
McDonnell, George Burleson	Austin.
McFarland, Hugh	Brownwood.
Martin, William Patrick	Rotan.
Maury, Lewis	San Antonio.
Mayo, Harry Mash, Jr	Houston.
Meredith, Carlton	Houston.
Milner, R. T., Jr	College Station.
Mirus, Carl Fredrick	Corsicana.
Graduate Corsicana High School.	
Montague, Frank Orum	Rockdale.
Graduate Rockdale High School.	
Moore, John Hartwell	DeKalb.
Mowery, I. H	Almeda.
Nelms, Milton Richard	Dallas.
Oatman, Victor	Creedmoor.
Orand, David Howard, Jr	Waco.
O'Conor, Robert	Laredo.
Palmer, George Clark	Dunn.
Parker, Lester Raymond	Davis, Okla.
Person, Leo King	Lewisville, Ark.
Persons, David Henry	Hico.
Graduate Hico High School.	
Peters, Edgar Milton	Hondo.
Graduate Marshall Training School.	
Pumphrey, Reason Beal, Jr	San Antonio.
Reynolds, Edward Elsworth	Albany.
Rhodes, Henry Gholson, Jr	Bryan.
Rollins, John Wesley	Merit.
Sanders, Grover Cleveland	Greenville.
Sanders, James Leander	Lavernia.
Savage, Carl Hamilton	Bailey.
Schley, William Solomon	Gatesville.
Scott, Daniel Walton	McKinney.
Scott, Verne	El Paso.
Searight, Gilbert Alexander	Austin.
Sengelmann, Gustav Hans Ferdinand	Schulenburg.
Seymour, James Dunn	Columbus.
Sherley, Andrew Abram	Anna.
Graduate Anna High School.	
Skeeler, William John	Orange.
Graduate Orange High School.	
Skeen, Spence David	Handley.
Smilie, Joe Hanson	Baileyville.
Smilie, William Harry	Baileyville.
Smith, Edwin Terrell	Fostoria.
Stacks, Emory Jefferson	Palmer.
Stacks, Roberts C	Palmer.
Stallings, James Henry	Bryan.
Stangel, Wenzel Louis	Fort Worth.
Graduate North Fort Worth High School.	
Sterling, Edward Arthur, Jr	Tulsa, Okla.
Stiteler, Ernest Earl	Smithville.
Tanner, Carl	Wolfe City.
Terrell, Joseph Percy	Navasota.
Thomas, Carl Everett	Corpus Christi.

Thomas, William Clinton	LaGrange.
Graduate LaGrange High School.	
Thomason, James Hendon	Huntsville.
Thornton, John McKinney	Gonzales.
Tigner, John Hughes	House.
Trew, Robert Lafayette	Myra.
Turner, Joseph Marston, Jr	Angleton.
Warren, Charles Frederick	Hewitt.
Graduate Hewitt Public School.	
Washam, Oscar Floyd	Hico.
Graduate Hico High School.	
Wellage, George Francis	Eagle Pass.
Wheless, William Meade	Beaumont.
Graduate Beaumont High School.	
White, John Parker	Lott.
White, Rufus David	Bynum.
Wisrodt, Clarence Emil Philip	Galveston.
Wood, Beall	San Marcos.
Wooten, Ralph Hudson	Senatobia, Miss.
Yeary, Horace Edwin	Farmersville.
Graduate Farmersville High School.	
Yeary, James Carroll	Farmersville.
Graduate Farmersville High School.	
Zuber, Neill Daniel	Bryan.

Total, 124.

Freshmen.

Abbott, John	Galveston.
Abbott, Thomas Jefferson	Mart.
Ainsworth, Bruce Shepard	Riesel.
Graduate Riesel High School.	
Allen, Joe Graham	Washington, Ind.
Amick, Oscar Floyd	Dalhart.
Andrews, Dallas Robert	Bryan.
Atchison, William Earl	Haskell.
Graduate Haskell High School.	
Atwell, Ulysses Sam	Hutchins.
Baker, Henry Cady	Navasota.
Bernal, Luis Ramirez	Eagle Pass.
Blakely, William Bassett	Richmond.
Bledsoe, William Scott	Lubbock.
Bollmann, Eric Joseph	Clarksville.
Boyett, Thomas Pinckney	Bryan.
Brailsford, Thomas Reed	Latexo.
Graduate Crockett High School.	
Brann, Lowesco	Shive.
Brown, Joe F	Rock Springs.
Bruce, Andrew Davis	San Antonio.
Buck, Beaumont B	Palestine.
Buckner, Louis McIntosh	Austin.
Bull, Alfred Castleman	Austin.
Burns, Douglass	Cuero.
Carleton, Howard Cantrell	Dallas.
Carter, James Quinton	Carrizo Springs.
Casey, Alfred Cecil	Burlington.
Clark, George Thomas	Waco.
Cole, Ransom James	Bryan.
Coleman, Everett Freeman	Prosper.
Collins, Willie Atmar	Groveton.
Connor, James Augustus	Lexington.
Graduate Lexington Public School.	
Copeland, Alvin B	Huckabay.
Crawford, Vernon William	Fort Stockton.
Crocker, Norman G	Center.
Crothers, William French	Brady.
Daugherty, Martin Marion	Alpine.

Davenport, Ernest V.	Eastland.
Dennis, Leon Chapman	Prince Bay, N. Y.
DeVlaming, Neville William	Kaufman.
Dibrell, James Crockett, Jr	Echo.
Donoho, Edward	San Antonio.
Dumas, Lawrence Washington	Bullard.
Edrington, Henry Clay	Fort Worth.
Ehlert, John Charles Fredrick	Brenham.
Ehlinger, Frank Charles	College Station.
Elder, Sam Enos	Clarksville.
Floyd, Nat Brelford	Pledger.
Foster, Charles Darwin	Riesel.
Foster, Thomas Hume	McKinney.
Graduate McKinney High School.	
Frazier, Jacob Moore, Jr	Belton.
Fuess, Carl Andrew	Cuero.
Gallman, Doyle Murphy	Quiangan, P. I.
Garrett, Melrose Truett	Merrimac.
Graduate Crawford High School.	
Gillespie, Jack Cole	Dallas.
Greene, Ossie Wendelken	Comanche.
Gregory, Haskell Thomas	Edgewood.
Graduate Edgewood High School.	
Grimes, Ezekiel William	Milford.
Hall, Robert Alison	Tarkington Prairie.
Harris, Carroll Joseph	Bryan.
Heath, Richard Hardy	Pittsburg.
Heldenfels, Grover Cleveland	Beeville.
Helm, Dury Lane	Clifton.
Graduate Clifton High School.	
Henry, Julian Lemonde	Lancaster.
Herring, William Douglass	Waco.
Hill, Samuel Edward	Bellville.
Hogue, Aubrey Lynn	Paris.
Graduate Paris High School.	
Jackson, John Henson	Richardson.
Graduate Richardson High School.	
Jennings, Weyman Clarence	Martindale.
Johnson, Albert Denarvous	Kaufman.
Johnson, Henry Isaac	Palestine.
Johnson, James Clyde	Richmond.
Jones, Richard	Bessmay.
Graduate Buna High School.	
Jones, Roy Colster	Myra.
Keasler, Thomas Frank	Mineral Wells.
Killough, Hugh Baxter	Center Point.
Lacy, William Horace	Tyler.
Lander, John William	Victoria.
Lauderdale, Jefferson Davis	Somerville.
Lawrence, Albert Sidney	Ravenna.
Graduate Ravenna Public School.	
Lawless, Frank Lucians	Lott.
Lockridge, Robert Napoleon	Iowa Park.
Loden, Homer Allen	Nacogdoches.
Graduate Nacogdoches High School.	
McBirney, William Carter	Chicago, Ill.
McDougald, Neill Robinson	Groveton.
McGilberry, Alton Earl	Shiro.
McGregor, Joel Ira	Millican.
McIver, James Dalrymple	Lexington.
McMillan, Roy Dillard	College Station.
Malloy, Henry Platter	Palestine.
Mangum, Eugene Edison	Groveton.
Martin, Charlie Brady	Bryan.
Massey, Raymond Rufus	Fort Worth.

Mercer, Ernest Franklin	Atwell.
Meyers, Horace Daniel	Haskell.
Mikeska, Edwin Frank	Brenham.
Miller, Avery Rubean	Huckabay.
Miller, Herman Edward	Bellville.
Miller, Steve Paul *Graduate Athens High School.*	Athens.
Mizell, Dee Bart	Kaufman.
Moffett, George Clarence *Graduate Chillicothe High School.*	Chillicothe.
Mogford, Joseph Sayers	London.
Morgan, Ira Carroll	Cleburne.
Morris, Thomas Kyle *Graduate Valley Mills High School.*	Valley Mills.
Moses, Andrew *Graduate Lampasas High School.*	Lampasas.
Motley, Robert Lee *Graduate Grand Prarie High School.*	Grand Prairie.
Murphy, Alfred Winston	Fort Worth.
Nisbet, Walker Robert	San Angelo.
Oltorf, John Gibson	Marlin.
Otto, John August	Ottine.
Pedigo, Maxie Smith *Graduate Valley Mills High School.*	Valley Mills.
Pepper, John Wilson	Rock Springs.
Perkins, Cyrus Wilber	McKinney.
Perkins, Paul Richard *Graduate Nacogdoches High School.*	Nacogdoches.
Porter, Thomas Sharp	Boyd.
Powell, Ire Hicks *Graduate Center High School.*	Center.
Punchard, Herbert Gillespie	Riesel.
Radetzki, Gus Reese	Houston.
Ray, Paul Franklin *Graduate Belton High School.*	Belton.
Reuss, John Alfred	Cuero.
Rhodes, Albert Marshall	Bryan.
Richardson, Henry Haller *Graduate Buna High School.*	Buna.
Richardson, James Samuel	Henderson.
Richardson, Will Jack	Athens.
Robert, Jack Baker	Albany.
Roberts, Roy Webb	Bryan.
Robertson, Harper Walter	Waelder.
Rogers, Victor Lee *Graduate Buna High School.*	Aldridge.
Rust, Charles Edward	Galveston.
Sawyer, Joseph Zetuc	Clarendon.
Schultz, Walter Gustave	Fort Worth.
Seale, Homer Teague	Corsicana.
Skeen, Arthur John	Handley.
Slay, Clyde	Fort Worth.
Smith, Langston Montgomery	Tyler.
Steel, Charles McClure	Weatherford.
Suber, Tom Goodwin	College Station.
Taylor, J. Preston	Runge.
Thacker, Grady Monroe	Crowell.
Thaxton, Robert *Graduate Mason Public School.*	Mason.
Thomas, Charles Leonard *Graduate Marfa High School.*	Marfa.
Thornhill, Roy	Dallas.
Tom, Preston White	Runge.
Torti, Maurice Leo *Graduate Tyler High School.*	Tyler.

Trueheart, John Crawford	San Antonio.
Vance, John William	Gouldbusk.
Watson, John Leroy	Stephenville.
Whisenant, Herbert Wesley	Dallas.
Wilkinson, Clark Newton	Blooming Grove.
Williams, Stump Marvin	Wills Point.
Williford, Johnson	Houston.
Witcher, Loftin Verdery	Fort Worth.
Graduate Fort Worth High School.	
Withers, Warren Tilley	Bryan.
Wood, Charles Sterling	Bessmay.
Graduate Buna High School.	
Wood, Henry Fort	Swan.
Wood, William Henry	Mission.
Zincke, August George	Fredericksburg.

Total, 155.

TWO-YEAR COURSE IN AGRICULTURE.

Second Year.

Barker, Fred Elijah	Palestine.
Barnhart, Charles Millett	Austin.
Bateman, Alex Rankin	Dublin.
Biggers, Oliver Nelson	Bonham.
Chappell, Robert Forrest	Brenham.
Eubank, James Hogg	Foard City.
Evans, Thomas	Hutto.
Findlater, Jean Martin	San Angelo.
Fowler, Gus Pearson	Spicewood.
Hinckley, Leon Carl	New Boston.
Graduate New Boston High School.	
Hinton, William Benton	Gainesville.
Hoffman, Carl Anton Leopold	Berlin, Germany.
Holekamp, Kurt August	Comfort.
King, James Bryant	Whitewright.
Krenek, Joseph	Dime Box.
McWilliams, George Leslie	Marshall.
Maddox, John Clyde	Nocona.
Martyn, William Pitt	Dallas.
Mays, Vernon Byrd	New Salem.
Mitchell, Claudie Lee	Winnsboro.
Randolph, William Millican	Austin.
Robb, Chester J	Gainesville.
Setzer, Walter Karl	Teague.
Weatherford, John Pierce	Driftwood.
Weir, Henry Howard	San Antonio.
Whaley, Beecher	Gainesville.

Total, 26.

First Year.

Aramburu, Henry	Mexico City, Mexico.
Arney, John Marion	Thornton.
Balboa, Rodrigo	Arriaga, Mexico.
Ballard, Curtis	Haskell.
Barse, William Horace	Fort Worth.
Bass, Matthew Lloyd	Houston.
Black, William Tom	McGregor.
Graduate McGregor High School.	
Bolton, Harrell Thomas	Waco.
Bouldin, David Wooldridge	Austin.
Boutwell, William Jones	Celeste.
Broome, George Stranahan	San Angelo.
Brown, John Ed., Jr	Waco.
Bryant, George Fitzgerald	Whitewright.
Burrus, Swan Thompson	College Station.

Caballero, Pedro Antonio	Nuevo Laredo, Mexico.
Carlisle, Edwin Fuller	Chapel Hill.
Clifton, George Whitney	Haskell.
Coleman, John Everett *Graduate Cotulla High School.*	Cotulla.
Collins, Carlos C	North Roby.
Cover, John Steele	Elmendorf.
Crow, Louie Conley	Meridian.
Cunningham, Tom Martin	Jacksonville.
Davis, Granville Ewing	Grandview.
Duck, Ira B	Dadeville.
Eckert, Willie John	Marlin.
Evans, George Noyes	San Antonio.
Federolf, Gus John	Brownsville.
FitzGerald, Paul Florea	Austin.
Franklin, Thomas Wiley	McKinney.
Frost, William	Mineral Wells.
Garland, Roy L	Annona.
de la Garza, Manuel Francisco	N. Laredo, Mexico.
Gillespie, Hubert Walter *Graduate Hardin School for Boys.*	Dallas.
Gillespie, William Edmonson	Alleyton.
Groeneveld, Eddie	Corpus Christi.
Hale, Carl Ray	Huckabay.
Harwood, Amasa Turner	Gonzales.
Hill, Mac Moran *Graduate McKinney High School.*	McKinney.
Holick, Edward Weldon	Bryan.
Holman, Jesse Rogers *Graduate Weimar Institute.*	Weimar.
Holmgreen, Herbert Howard	San Antonio.
Houghton, Roy Edward	Lyford.
Hurt, Wilbur Torney	Dallas.
Johnston, Lewis Trundle	Paris.
Jones, Loyd Clifton	Bono.
Kirkpatrick, Ira Landreth	Whitewright.
Klein, Ferdinand Peter	Marion.
Landers, Grover William	Cleburne.
Law, Jarrette D	Belton.
Liddell, James Woodlan	Fort Worth.
Little, Lewis Norman	Goldthwaite.
London, Clyde Earnest	Bailey.
Luedtke, Edward Henry	McGregor.
McGown, Grover	Fort Worth.
McIntyre, Willie Stokes	Roans Prarie.
McMurray, Samuel Flemine	Cuero.
Martin, Paul Henry	Mason.
Meerscheidt, Hilmar	San Antonio.
Meincher, William August	Leroy.
Metcalfe, Penrose Blakely	San Angelo.
Moore, Gordon Bennett	Midlothian.
Page, Oliver Barnett	Sherwood.
Peterson, John Lee	Bonham.
Peutet, John Paul	College Station.
Pierson, John Cleveland *Graduate Haskell High School.*	Haskell.
Prell, Randolph Fred	Brazoria.
Puckett, Cyrus Wells	Silverton.
Raiden, James Robert	Honey Grove.
Raiden, William Martin	Honey Grove.
Reding, John Brown	Grand Saline.
Reese, William Clifford	Colorado.
Roberts, Raymond	Gainesville.
Robison, John Elbert, Jr	Prosper.
Routh, Oscar Ralph	Ballinger.

Routt, Joseph Lewin	Navasota.
Russell, George Hill	Cotulla.
Graduate Cotulla High School.	
Scasta, Jerry J	Wheelock.
Schattel, Joe Isidor	Hungerford.
Scofield, John S	Gainesville.
Sears, Homer Head	Bells.
Shaw, Blocker	Fort Worth.
Shelton, John Malcolm	Shamrock.
Smith, Herman	Mineral Wells.
Graduate Mineral Wells Public School.	
Smith, Horace Chilton	Huckabay.
Smith, Joseph Louis	McKinney.
Smith, McBroom Vandiver	Columbus.
Graduate Columbus High School.	
Smith, William Veasy	Belton.
Stiles, William Lyford	San Antonio.
Taylor, Earl Eugene	San Antonio.
Graduate San Antonio High School.	
Tomlinson, Mack Berry	Detroit.
Graduate Detroit Public School.	
Turnbow, Daniel Jackson	Coushatta, La.
Vance, John Bernard	Devine.
Vance, James Leslie	Devine.
White, Morris Brush	Waco.
Wolff, Otto Henry	Marlin.
Wynn, Charles Clinton	Bryan.

Total, 96.

UNCLASSIFIED.

Haller, Raymond Burton	Victoria.
Knolle, Roger Edmund	Industry.
*Koons, Archer William	Nada.
Menke, Edgar Paul	Hempstead.
Mizell, John Love	Waxahachie.
Runge, James Forest	Galveston.
Wallis, Jack	Cuero.

Total, 7.

SPECIAL STUDENTS.

Barnes, Alpheus Milton	Corpus Christi.
Brann, Erich Julius	Fort Worth.
Clark, Earle	Omaha, Neb.
Harding, Lewis	Bryan.
Harle, Paul C	Memphis.
Oberrender, Willie Gotthold	Comfort.
Sanders, Marion Dewitt	Mexia.
Taylor, William Darden	Homer, La.

Total, 8.

SHORT WINTER COURSE IN AGRICULTURE.

Acker, H. W	Whitehouse.
Allen, W. E	Singleton.
Bagwell, J. F	Wharton.
Banzhof, George	Rockdale.
Barrington, S. H	Kountze.
Banks, R. L	Weatherford.
Barrier, A. B	Mount Pleasant.
Beaird, H. E	Tyler.
Beeson, H. W	Lovelady.
Benson, J. W	Sinton.
Berry, H. G	Mesquite.
Berryman, O. G	Meridian.
Bond, R. L	Buna.

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*Deceased.

Brazelton, W. L	Anson.
Brown, L. A	Nacogdoches.
Buchanan, A. W	Bryan.
Burkhalter, H. P	Vernon.
Butcher, J. W	San Angelo.
Caldwell, J. E	Brownwood.
Calvert, W. C	Sweetwater.
Campbell, J. W	Holliday.
Clossen, John	Bracken.
Connor, J. M	Daingerfield.
Cotton, A. J	Bertram.
Covington, J. A	Waller.
Cox, R. B	Waco.
Cunyus, J. P	Longview.
Davis, W. E	Austin.
Dean, M. G	Paris.
Dennis, H. C	Athens.
Drake, J. G	Lockhart.
Drummond, A. H	Caps.
Eastipp, H. D	Pennington.
Edmonds, J. R	Quitman.
Edwards, Glen	Bullard.
Erickson, J. H	Greenville.
Eudaly, G. W	Fort Worth.
Fisher, G. W	Fort Worth.
Freeman, M. J	Dallas.
Ganzer, William	Denton.
Garland, W. R	Annona.
Gardner, R. J	Granbury.
Gavenda, Otto	Caldwell.
Gibson, P. A	Teague.
Giles, E. V	Austin.
Giles, T. J	Mason.
Gilliland, D. B	Decatur.
Gilson, W. H	San Saba.
Goodson, E. M	Rusk.
Greer, J. D	Nacogdoches.
Griffin, J. W	Brady.
Gruss, E. W	Galveston.
Handy, J. S	Abilene.
Hardwicke, D. H	Abilene.
Hart, S. C	Jefferson.
Hays, M. L	Clyde.
Hilton, F. E	Waxahachie.
Hood, J. C	Anson.
Hughes, D. A	Dallas.
Hunter, L. T	Henrietta.
Johnson, G. W	Newton.
Justice, M. A	Donie.
Kloppenburg, J	Sublime.
Kolberg, O. G	Eagle Lake.
Lawson, L. O	McGregor.
Liles, E. M	Chilton.
McMaster, William	Clarksville.
Mackey, A. J	Lampasas.
Mann, R. E	Halsell.
Marks, Tom M	Jacksboro.
Martin, B. B	Liberty.
Mathis, W. R	New Boston.
Matthews, D	Athens.
Mitchell, R. S	Victoria.
Morris, T. G	Angleton.
Myers, D. C	Cookville.
Orms, G. W	Mineola.
Orms, L. E	Sulphur Springs.

Orr, W. C	Red Oak.
Palmer, J. R	Comanche.
Payne, M. T	Temple.
Peel, F. A	Abilene.
Persons, R. W	Beaumont.
Pipkin, J. A., Jr	Waco.
Quicksall, J. F	Brady.
Quicksall, J. L	Waco.
Rebmann, J	Houston.
Roberson, D. D	Valley View.
Runnels, Lewis	Willis.
Scott, V. L	Marshall.
Shanks, J. T	Cuero.
Shelton, W. R	LaGrange.
Smith, D. A	Bryan.
Smith, George A	Beaumont.
Smith, P. D	Beeville.
Stieler, W	Comfort.
Stitt, O. J	San Marcos.
Strange, D. M	Pittsburg.
Tackett, R. O	Dublin.
Tidwell, J. R	Franklin.
Tisdal, N. R	Huntsville.
Trueheart, W. E	Holland.
VanKirks, A. S	Bonham.
Walton, T. O	Livingston.
Weisinger, W. S	Ryals.
Wilkins, P. P	Collinsville.
Wilkinson, L. C	Katy.
Withers, R. C	Buna.
Wood, T. B	Groveton.

Total, 109.

SUMMER SCHOOL OF COTTON CLASSING, 1912.

Birkelbach, Henry	Thrall.
Hammon, W. H	Brookesmith.
Higgins, W. W	San Benito.
Luke, Bernard	Muenster.
Norwood, Sam	Dripping Springs.
Steinle, A. N	San Antonio.

Total, 6.

SCHOOL OF ENGINEERING.

Abbreviations: A. E., Architectural Engineering; Arch., Architecture; Ch. E., Chemical Engineering; C. E., Civil Engineering; E. E., Electrical Engineering; M. E., Mechanical Engineering; T. E., Textile Engineering.

Graduate Students.

Bechert, Fred John *B. S., A. and M. College of Texas, 1911; M. E., 1912.*	Ch. E	Corpus Christi.
Bryant, William Thoreau *B. S., A. and M. College of Texas, 1911.*	Ch. E	Hillsboro.
Forsyth, James Milen *B. S., A. and M. College of Texas, 1912.*	M. E	McKinney.
Lehmann, Emil Wilhelm *B. S., Mississippi A. and M. College, 1910.*	E. E	College Station.
McAdams, Edward E *B. S., A. and M. College of Texas, 1911.*	C. E	Bedias.
McMillan, Luther Burchard *B. S., A. and M. College of Texas, 1911; M. E., 1912.*	Ch. E	Anchor.
Mansfield, Bruce Jefferson *B. S., A. and M. College of Texas, 1912.*	C. E	Columbus.
Morley, Marcus DeLafayette *B. S., A. and M. College of Texas, 1912.*	M. E	Fort Worth.

Neff, A. Judson	M. E.	College Station.
	B. S., A. and M. College of Texas, 1903.	
Newton, John Wharton	Ch. E.	Bryan.
	B. S., A. and M. College of Texas, 1912.	
Proctor, Joseph Harold	E. E.	Houston.
	B. S., A. and M. College of Texas, 1910.	
Windrow, Rollen Joseph	C. E.	College Station.
	B. S., A. and M. College of Texas, 1906.	

Total, 12.

Seniors.

Alexander, Melville Richard	C. E.	Navasota.
Anderson, John Victor	C. E.	Abilene.
	Graduate Abilene High School.	
Anderson, Meriwether Lewis	E. E.	Eagle Lake.
Anderson, Rexford Olan	M. E.	Denton.
	Graduate Denton High School.	
Apperson, Roy Stephenson	E. E.	Commerce.
Baylor, Robert Emmett	C. E.	Montell.
Beazley, Charles Nugent	C. E.	Grapeland.
Bell, Tyree L., Jr	C. E.	Dallas.
Birk, Ralph Adolphus	C. E.	Iowa Park.
	Graduate Iowa Park High School.	
Borchert, William Charles	C. E.	Kyle.
Bourland, William Fowler	C. E.	Valley Springs.
Bowler, Samuel Edwin	E. E.	Fort Worth.
Brown, James Franklin	E. E.	Fort Worth.
Buchanan, John Dixon	E. E.	Bryan.
Burleson, Wade Hampton	E. E.	San Saba.
Burton, Allan	A. E.	Clarendon.
Cade, King Charles	C. E.	Birkville.
Cain, Robert Wofford	C. E.	Athens.
Campbell, Price	E. E.	Weatherford.
Chambers, Taylor Lee	E. E.	Sherman.
Chinski, Charles Clarence	C. E.	Beaumont.
	Graduate Beaumont High School.	
Christian, James Russell	Ch. E.	Houston.
	B. S., A. and M. College of Texas, 1911.	
Collins, James William Herring	T. E.	Mexia.
	Graduate Mexia High School.	
Davis, John Newton, Jr	C. E.	Hico.
	Graduate Hico High School.	
Donoho, William Thompson	C. E.	Utopia.
Dreiss, Edward, Jr	T. E.	San Antonio.
	Graduate San Antonio High School.	
Fischer, Harrison Howard	M. E.	Kansas City, Kan.
	Graduate Port Arthur High School.	
Fitzpatrick, Brandon	C. E.	Columbus.
	Graduate Columbus High School.	
Fountain, Edmund Jones, Jr	A. E.	Bryan.
French, William Allen, Jr	C. E.	Kaufman.
	Graduate Carlisle Military Academy.	
Fries, Louis, Jr	A. E.	San Antonio.
Gillette, Paul Clifford	C. E.	Bellaire.
Gist, William Belew	C. E.	Nocona.
Gonzales, Jose de la Merced	C. E.	Tampico, Tamps., Mex.
Grissom, Roy John	C. E.	Fort Worth.
Hale, John Davis	E. E.	Anson.
Hays, Forest Park	E. E.	Smithville.
	Graduate Smithville High School.	
Hefner, William Jesse	E. E.	Cuero.
Hill, John Rutledge	C.E.	Wills Point.
Holland, Charlie Jenkins	Ch. E.	Brownwood.
Hudgins, Lewis Allison	Ch. E.	Houston.
Jackson, William Halbert	C. E.	Graham.

Johnston, Lemuel Munroe	M. E.	Bryan.
Jones, Hamlet Park	C. E.	Kaufman.
Graduate Kaufman High School.		
Josserand, Lewis Peter	A. E.	Groveton.
Graduate Groveton High School.		
Keller, Jules	E. E.	Houston.
Graduate Houston High School.		
King, Thomas S	E. E.	Victoria.
Koinm, Charles Herman	E. E.	Aldine.
Kraege, Alfred C. A	E. E.	Yorktown.
Lammers, Edwin S., Jr	E. E.	Dallas.
Langford, Ernest	A. E.	Bertram.
Lidiak, Joseph Paul	M. E.	Muldoon.
Graduate LaGrange High School.		
Lienhard, Leon Victor	C. E.	Cuero.
Lorenz, John Henry	M. E.	Stockdale.
Graduate Stockdale High School.		
Lott, James Guy	C. E.	Beeville.
Graduate Beeville High School.		
Lyles, John Vinston	C. E.	Blue Grove.
Graduate Bellevue High School.		
McDonald, James Milton	E. E.	Ozona.
Miller, Robert H	E. E.	Ben Franklin.
Mills, Eben Hulbert	C. E.	San Antonio.
Montgomery, Fred Lawrence	C. E.	Corsicana.
Nolte, Robert Walker	E. E.	New Orleans, La.
Nussbaum, Julius Harold	M. E.	Mexia.
Oliphant, Luther Nugent	C. E.	Rice.
Olson, John N	C. E.	Galveston.
Orth, William Alva	A. E.	Yoakum.
Park, Oscar Brantley	E. E.	Bryan.
Graduate Mexia High School.		
Ragsdale, Thomas Milton	A. E.	Flatonia.
Roberts, Frank Allen	C. E.	Austin.
Rollins, Joseph Guy	C. E.	Merit.
von Rosenberg, Hilmer Carl	E. E.	Hallettsville.
Graduate Hallettsville High School.		
Sayers, Albert Fawcett	C. E.	Houston.
Schaefer, Seley Eugene	M. E.	Waco.
Schroeter, Richard Ralph	C. E.	Double Horn.
Simon, Raphael Bernard	E. E.	Houston.
Graduate Houston High School.		
Spence, Thomas Reese	C. E.	College Station.
Spencer, Thomas Carroll	C. E.	Athens.
Stevens, Alexander Campbell	A. E.	Burnet.
Thomas, Hugh Wesley	C. E.	Dallas.
Tigner, Joseph Bingham	T. E.	Duke.
Torrence, William Clifton	M. E.	Waco.
Tucker, David Halsey	E. E.	Missouri City.
Vesmirovsky, Ed	T. E.	Bryan.
Graduate Bryan High School.		
Walker, Phelps White	E. E.	Gonzales.
Walzem, Louis Frederick	M. E.	New Braunfels.
Graduate New Braunfels High School.		
Waters, Jerome Jackson, Jr.	C. E.	San Antonio.
Whiteside, Blount	C. E.	Lott.

Total, 86.

Juniors.

Baker, Harlan Kay	E. E.	Haskell.
Graduate Houston High School.		
Biggers, Chester Arthur	E. E.	Bonham.
Booth, George Edward	M. E.	Chico.
Braunig, Hubert Edwin	E. E.	Hallettsville.
Broome, William Scott	C. E.	Memphis.
Graduate Memphis High School.		

Butts, Edgar Branch	C. E.	Cisco.
Graduate Cisco High School.		
Camp, George Dashiel	C. E.	San Antonio.
Graduate Walnut Springs High School.		
Clement, Charles Burbank	Arch	Port Lavaca.
Cole, Noah Davis	E. E.	Bryan.
Cushman, Cecil Alonzo	E. E.	Sherman.
Graduate Sherman High School.		
Darby, James Henry	C. E.	Cedar Hill.
Davis, Thomas Charlton	C. E.	Poteet.
Graduate Bronson High School.		
Denton, Velpain Curlee	C. E.	Lone Oak.
Dorroh, George Ross	M. E.	Leander.
Emmett, Carl Perry	M. E.	Hamilton.
Farthing, William Eugene	C. E.	Valley View.
Felt, Wright Lafayette	E. E.	Hamilton.
Ford, Earl Raymond	M. E.	Peniel.
Forsyth, William Russell	M. E.	McKinney.
Graduate McKinney High School.		
Fouraker, Leroy Levi	E. E.	Dallas.
Graduate Dallas High School.		
Fouraker, Raymond Spivey	E. E.	Dallas.
Graduate Dallas High School.		
Fowler, William Brown	Arch	Dallas.
Giesecke, Walter Guenther	M. E.	San Antonio.
Groginski, Philip	E. E.	Bryan.
Harrison, Julius Caesar	M. E.	Stockdale.
Graduate Stockdale High School.		
Herrington, James Joseph, Jr	M. E.	Neshoba, Miss.
Homann, Frederick Adolph	M. E.	New Braunfels.
Graduate New Braunfels High School.		
Jarvis, Joseph Robert	Ch. E.	Brandon.
Graduate Brandon High School.		
Jennings, Albert Lawrence	M. E.	Kosse.
Graduate Kosse High School.		
Jones, Tignall William	E. E.	Sinton.
Knox, George Pierce	Arch	San Antonio.
Kotzebue, Meinhard Henry	M. E.	Flatonia.
Graduate Flatonia High School.		
Levy, David H	E. E.	Waco.
Graduate Waco High School.		
McAlpin, Claude Thomas	M. E.	Eagle Pass.
Graduate Eagle Pass High School.		
McCraw, William S	E. E.	Dallas.
Mayers, Hayden Potter	C. E.	Wagner, Okla.
Meriwether, Gay Clifford	E. E.	Tampico, Mexico.
Miller, Vance Woody	E. E.	Springtown.
Nicholson, Robert Marcelino	E. E.	Houston.
Parker, Earl	E. E.	Carthage.
Perrin, Harvey	Arch	College Station.
Peterson, Joseph Arvid	M. E.	Louise.
Graduate Louise Public School.		
Pickens, Dennis Brandt	E. E.	Wallis Station.
Graduate Wallis Public School.		
Poetter, Norman Mitchell	M. E.	Franklin.
Powell, Louis Hamilton	C. E.	Baird.
Rack, Edgar Charles	M. E.	Waco.
Graduate Douglas Select School.		
Rollins, Millard Elisha	M. E.	Merit.
Schmidt, Frederick Harry	C. E.	Kingsbury.
Schuwirth, William Charles	M. E.	San Antonio.
Scott, Floyd Logan	M. E.	Waco.
Senter, Erasmus Gilbert, Jr	C. E.	Dallas.
Graduate Dallas High School.		
Shannon, James William	M. E.	Madisonville.

Shiller, Harry Hinek	M. E.	Victoria.
Simmons, Jared Claude	E. E.	Waco.
Slay, Samuel Houston	M. E.	Frost.
Graduate Frost High School.		
Smith, John Randolph	C. E.	Columbia.
Smith, William Aubrey	C. E.	Denison.
Smitham, Verner	M. E.	Walnut Springs.
Taliaferro, Eugene Sinclair	Ch. E.	Houston.
Taylor, Henry Stanley	C. E.	Cookville.
Tinker, Ernest Briggs	C. E.	Brandon.
Graduate Brandon High School.		
Vossler, James Mears	E. E.	Palestine.
Wallace, James Asberry	E. E.	Blooming Grove.
Wear, Hugh Andrew	Arch.	Rogers.

Total, 64.

Sophomores.

Andrews, Albert	T. E.	Sherman.
Graduate Sherman High School.		
Askew, Henry Forest	M. E.	Baileyville.
Avinger, John Hamilton	M. E.	Avinger.
Baccus, Embury Depee	E. E.	Seymour.
Graduate Seymour Public School.		
Baker, Claud	Arch.	Houston.
Bates, Wade Hamilton	E. E.	Roby.
Bell, Jeff E	C. E.	Luling.
Graduate Luling High School.		
Bennett, Frank Crine	C. E.	Henderson.
Graduate Henderson High School.		
Black, Robert Clyde	C. E.	Skidmore.
Graduate Skidmore Public School.		
Blanchard, J. Guion	E. E.	Amarillo.
Graduate Amarillo High School.		
Booth, Charles James	Arch.	Austin.
Bouknight, Raymond Andre	E. E.	Greenville.
Graduate Greenville High School.		
Bradley, Lewis Lawson	M. E.	Baileyville.
Branson, Alfred Lovell, Jr	M. E.	Marlin.
Braumiller, Walter Edwin	C. E.	Texarkana.
Graduate Texarkana High School.		
Brewster, Herbert Thomas	C. E.	Terrell.
Browder, John Hosea, Jr	T. E.	Groesbeck.
Brown, Earl Travis	E. E.	Del Rio.
Graduate Del Rio Public School.		
Brown, James David	Arch.	Rockport.
Graduate Rockport Public School.		
Brumfield, Elmer Berry	E. E.	Alvin.
Bussey, Flem Bledsoe	E. E.	Hutchins.
Caruthers, Lawrence Haley	E. E.	Alpine.
Graduate Alpine High School.		
Cawthon, Frank Walter	C. E.	Denison.
Graduate Denison High School.		
Clark, Frank Haddon, Jr	E. E.	Clarksville.
Graduate Clarksville High School.		
Clarkson, Percy William	E. E.	San Antonio.
Crisp, Marshall Claiborne	Arch.	Cuero.
Graduate John C. French High School.		
Crosby, George Thomas	E. E.	Lockhart.
Crown, Phil Theodore	Arch.	Waco.
Davis, Dean	E. E.	Dawson.
DeLong, Raleigh	M. E.	Mexia.
Densmore, Ralph Albert	C. E.	Dallas.
Densmore, Robert Earl	C. E.	Dallas.
Dickie, Byron Homer	E. E.	Breckenridge.
Graduate Breckenridge Public School.		

Dunning, George Rutledge	Ch. E.	Gonzales.
Elmendorf, Harold Benjamin	C. E.	Port Arthur.
Graduate Port Arthur High School.		
Faber, Bennie Herman	C. E.	Eagle Lake.
Graduate Eagle Lake High School.		
Fendley, James Monroe	Arch.	Galveston.
Graduate Ball High School.		
Francisco, Edgar Oliver	C. E.	Coalgate, Okla.
Gillespie, William Spence	C. E.	Houston.
Glaze, Wesley Ogden	E. E.	Goliad.
Graves, Thaddeus Cullen	C. E.	Hutchins.
B. A., Texas Christian University, 1912.		
Haden, Julian Frank	Arch.	Timpson.
Graduate Timpson High School.		
Hargett, Frederick	C. E.	Texarkana.
Hawes, Roscoe	C. E.	San Antonio.
Graduate Uvalde High School.		
Hobbs, Leonard Sinclair	M. E.	Brownsville.
Graduate Brownsville Public School.		
Hogue, Ernest Newton	E. E.	Paris.
Graduate Paris High School.		
Hook, Donnie Leon	M. E.	Sherman.
Graduate West High School.		
Hudspeth, Clarence Chancey	E. E.	Hondo.
Jarrett, Ed Lee	E. E.	Valley Mills.
Graduate Valley Mills High School.		
Jernigan, Dudley Cotter	Arch.	Commerce.
Kern, Robert Augustus	C. E.	Columbus, Ohio.
Kiesling, Justin Alucius	E. E.	Houston.
Graduate Houston High School.		
Levy, Edmond Harrison	C. E.	Texarkana.
Graduate Texarkana High School.		
Love, Joseph William	E. E.	Salado.
Graduate Thomas Arnold High School.		
Lynch, Henry	C. E.	Amarillo.
Graduate Amarillo High School.		
McCarty, Stuart Clare	C. E.	Taylor.
Martin, William Leslie	M. E.	Bryan.
Mason, Stephen Kearney	C. E.	San Antonio.
Mathews, Reuben Kennett	T. E.	Hearne.
Graduate Hearne High School.		
Mayers, Frank Gilbert	Arch.	Wagoner, Okla.
Mitchell, George William	M. E.	San Antonio.
Montgomery, Samuel	C. E.	Corsicana.
Morgan, Henry Julius	C. E.	Temple.
Graduate Temple High School.		
Morrison, Douglass Eaton	E. E.	Trenton, Ga.
Moss, Mac Augustin	C. E.	Izora.
Moursund, L. E	E. E.	Fredericksburg.
Nash, John Forbes	E. E.	Belton.
Overstreet, Andrew Madison	Ch. E.	Fort Worth.
Graduate Fort Worth High School.		
Pirie, Felix Paul	C. E.	Parita.
Randall, Richard Owen	E. E.	San Antonio.
Graduate Beeville High School.		
*Rawlins, Fisher Younger	E. E.	Ardmore, Okla.
Regenbrecht, Albert, Jr	Ch. E.	Peters.
Reynolds, William LaFayette	M. E.	Buck.
Graduate Livingston High School.		
Rhodes, James Efford	T. E.	Iola.
Roberts, Paul Vane	C. E.	Taft.
Robertson, John Marshall	M. E.	Ganado.
Rothe, Hans Hugo	Arch.	Hondo.
Graduate Hondo High School.		

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*Deceased.

Sansom, George Wallace	T. E.	Groesbeck.
Graduate Mart Public School.		
Saper, Gustave Alexander	Ch. E.	Houston.
Scott, Homer Amon	Arch.	Frost.
Graduate Frost High School.		
Senter, Seldon William	C. E.	Dallas.
Sinclair, William Carl	E. E.	Wolfe City.
Siros, Alphonse, Jr	E. E.	Laredo.
Graduate Laredo High School.		
Skeeler, Leon James	Ch. E.	Orange.
Graduate Orange High School.		
Smith, Marvin Wadsworth	E. E.	Overton.
Graduate Overton High School.		
Spurlock, Daniel W	C. E.	Corsicana.
Graduate Corsicana High School.		
Stiles, Robert Walker	A. E.	San Antonio.
Streuer, Julius William	E. E.	New Braunfels.
Stribling, Simpson Ridley	E. E.	Waco.
Taylor, H. W	E. E.	Houston.
Thalmann, Friedrich Berthold	M. E.	Bandera.
Thomas, Mitchell Boyd	E. E.	Texarkana.
Turnage, Rodger Elmo	E. E.	LaGrange.
Graduate LaGrange High School.		
Walker, Frank Erastus	C. E.	Eagle Lake.
Graduate Eagle Lake High School.		
Weatherly, Richard Keene	T. E.	Grapevine.
Graduate Grapevine High School.		
Wellman, J. Walter	M. E.	Beaumont.
West, James Hogg	E. E.	Merkel.
Graduate Merkel High School.		
West, Oscar Gregory	E. E.	Columbus.
Graduate Columbus High School.		
White, John Calvin	M. E.	Grand Saline.
Whittet, Chester Stiggins	Ch. E.	Anchorage.
Williams, Clayton Wheat	E. E.	Fort Stockton.
Williams, Richard Stokely	T. E.	Thorpe.
Willman, George Conan	T. E.	Bryan.
Wilson, Charles Sebastian	M. E.	Bryan.
Wood, Jackson Broadus	C. E.	Enid, Okla.
Wotipka, Frank Louis	M. E.	Flatonia.
Graduate Flatonia High School.		
Wright, Lucian	E. E.	Fredericksburg.
Young, Roy Lester	E. E.	Hallettsville.
Graduate Hallettsville High School.		

Total, 108.

Freshmen.

Aldridge, Edwin Ernest	M. E.	Eagle Pass.
Graduate Eagle Pass High School.		
Alexander, Earl Gladstone	T. E.	Paducah.
Graduate Paducah High School.		
Alexander, John Richmond	M. E.	Navasota.
Graduate Navasota High School.		
Alford, Jesse Burk	E. E.	Henderson.
Allen, Robert Lee, Jr	E. E.	San Antonio.
Anderson, Benjamin Watson	C. E.	Waxahachie.
Ard, Robb Luther	E. E.	Seagoville.
Atchley, Ernest Earl	E. E.	Abbott.
Atwell, Snyder	C. E.	Dallas.
August, Lester Holmes	C. E.	Luling.
Graduate Luling High School.		
Baker, Roy	M. E.	Anson.
Barnett, Curtis Hugh Washington	E. E.	Caldwell.
Bartley, Wannie Lee	C. E.	El Paso.

Baur, George Frank August	M. E.	Moulton.
Graduate Sam and Will Moore Institute.		
Beringer, Milton Streuer	Ch. E.	Gonzales.
Graduate Gonzales High School.		
Blalock, Lewis Brown	E. E.	Kosse.
Graduate Kosse High School.		
Blanchard, William Wesley	C. E.	Highland Falls, N. Y.
Bland, Mack Theodore	C. E.	Port Arthur.
Graduate Port Arthur High School.		
Bowles, John Cleveland	C. E.	Rockwall.
Boyett, Guy Frank	C. E.	College Station.
Bramlette, Frederick Levenworth	C. E.	Longview.
Braumiller, Nicholaus Mathias	M. E.	Texarkana.
Graduate Texarkana High School.		
Brigance, George	E. E.	Sherman.
Brown, James Roger	Arch.	Hallettsville.
Graduate Hallettsville Public School.		
Brown, Mitchell Harvey	E. E.	Rockwall.
Brown, Prather Hayes	C. E.	Dallas.
Bryan, Banard Dashill	C. E.	Abilene.
Burkett, Fred	C. E.	Morgan.
Burkett, James Marion	E. E.	Graham.
Graduate Graham High School.		
Burt, Francis Stanislaus	M. E.	Brownwood.
Camp, Thomas Ringgold	Arch.	San Antonio.
Campbell, Ray	C. E.	Holliday.
Chambers, David Cheatham	M. E.	New Boston.
Graduate New Boston High School.		
Clark, Harold McConnell	E. E.	San Angelo.
Clarke, Hugh St. Clair	M. E.	Comanche.
Graduate Comanche High School.		
Claytor, Edward McRae	E. E.	Campbell.
Cogdell, Charles White	E. E.	Hereford.
Coleman, Frank Ralph	C. E.	Hallettsville.
Graduate Hallettsville High School.		
Coleman, William Herbert	M. E.	Cotulla.
Graduate Cotulla High School.		
Collins, William Louis	Arch.	Denton.
Graduate Denton High School.		
Combs, Albert Read	E. E.	Velasco.
Graduate Velasco High School.		
Coney, Mason Cleveland	E. E.	Cleburne.
Graduate Cleburne High School.		
Coogle, Jesse	M. E.	Corsicana.
Graduate State Orphan High School.		
Cook, Joe Tollie	E. E.	Rosebud.
Cooper, B. Zachariah	Arch.	Clifton.
Graduate Clifton High School.		
Cornett, Guy Joris	C. E.	Grandview.
Cox, Carl Clarence	E. E.	Mt. Vernon.
Graduate Mt. Vernon Public School.		
Crocker, William Jennings	E. E.	Dallas.
Croom, Guy	E. E.	Elmina.
Crow, William Thomas	E. E.	Electra.
Graduate Waxahachie High School.		
Curnutte, James Vincell	C. E.	Snyder.
Graduate Snyder High School.		
Davidson, Lewis	Arch.	Sanger.
Davidson, Ross Wilson	E. E.	San Felipe.
Davis, William Kinnard	E. E.	Hico.
Graduate Hico Graded School.		
Dickie, Alexander	E. E.	Breckenridge.
Graduate Breckenridge Public School.		
Doucette, Fred L	E. E.	Grayburg.
Graduate Sour Lake High School.		

Downs, Otis Lee Roy..................E. E.........Fort Worth.
Graduate Mineral Wells High School.
Driggers, James Robert...............C. E.........Chickasha, Okla.
Dyer, Fletcher Floyd.................M. E.........Barstow.
Easley, Claudius Miller..............Arch.........Waco.
Graduate Waco High School.
Eisemann, John Ed....................Arch.........Houston.
Ellsworth, Frank Leslie..............T. E.........San Antonio.
Erskine, Wood Steele.................E. E.........San Antonio.
Fleming, Charles Herman..............Arch.........Merit.
Graduate Fort Worth High School.
Foster, Julian Lewis.................E. E.........Fort Worth.
Furman, Edward Edwards...............E. E.........Corpus Christi.
Gaines, Paul.........................E. E.........Hasse.
Gannon, Russell Clyde................C. E.........Denison.
Graduate Denison High School.
Garrison, Richard Eugene.............M. E.........Pilot Point.
Graduate Pilot Point Public School.
Gooch, Roy Branch....................M. E.........Temple.
Graduate Temple High School.
Graves, Albert Horne.................Arch.........Fort Worth.
Gray, Oscar Somers...................E. E.........Terrell.
Graduate Terrell High School.
Green, Eugene........................E. E.........San Marcos.
Greer, James Frank...................Ch. E........Waco.
Graduate Waco High School.
Grubbs, Ronald Earle.................E. E.........Temple.
Graduate Temple High School.
Hagaman, Leslie Hilsman..............C. E.........Ranger.
Hajek, William Stephan...............T. E.........Bryan.
Graduate Allen Academy.
Harrison, James S....................C. E.........Waco.
Graduate Allen Academy.
Hawkins, Alden Riley.................C. E.........Dallas.
Haynes, Sylvan Blum..................Arch.........Port Arthur.
Graduate Port Arthur High School.
Hefner, Charles Balser...............M. E.........Cuero.
Graduate John C. French High School.
Henley, Ernest Nelson................C. E.........Brackettville.
Hockaday, Irving Thomas..............E. E.........Hollis, Okla.
Hollingshead, Frank Adolphus.........Ch. E........Ganado.
Holmgreen, Warren Erixson............M. E.........Lavernia.
Holt, Lester Berry...................E. E.........Arcadia.
Hoppe, Roland Charles................M. E.........Cypress Mill.
Horn, Scott Elthan...................E. E.........Alvin.
Hutchings, John Henry................M. E.........Galveston.
Irby, Benjamen Earle.................Arch.........Beaumont.
Graduate Beaumont High School.
Isbell, Lester Livingston............Arch.........Uvalde.
Jopling, Homer Augustus..............Arch.........Trinity.
Graduate Trinity High School.
Joy, Whitney Orvan...................T. E.........Ingram.
Kaler, Earl Schnurr..................C. E.........Corpus Christi.
Keeling, Roy Elden...................C. E.........Dallas.
Kelly, David Cleveland...............C. E.........Greenville.
Graduate Greenville High School.
Kerbow, Herbert Ralph................E. E.........Clarendon.
Kiber, Daniel Henry..................M. E.........Corsicana.
Graduate Corsicana High School.
King, Paul Duckett...................C. E.........Grand Prairie.
Graduate Grand Prairie High School.
Kirven, John Dunnagan................C. E.........Wynne Wood, Okla.
Kristek, George Henry................E. E.........Flatonia.
Kurtz, Lawrence A....................E. E.........Seadrift.
Lamm, William Alden..................M. E.........Haskell.

Leatherwood, James Herman	Arch	Merit.
Lockett, William Cureton	E. E	Cleburne.
Love, Robert Phocian	C. E	Bryan.
Graduate San Angelo High School.		
Lyons, Leslie Thayr	E. E	Buena Vista.
McAuliff, Lester T.	E. E	Houston.
MacFadden, Samuel Poole	E. E	San Antonio.
Graduate San Antonio High School.		
Marquess, Harry Clyde	M. E	Calvert.
Graduate Calvert High School.		
Marrs, Cecil Douglass	C. E	Terrell.
Graduate Terrell High School.		
Mattingly, Claude	E. E	LaGrange.
Mauldin, Ed	E. E	Lancaster.
Mercer, Vandal Day	E. E	Chilton.
Graduate Douglas Select School.		
Montgomery, Homer Roy	C. E	Muskogee, Okla.
Morgan, John	C. E	Bronson.
Mueller, Charles Paul	M. E	San Antonio.
Murphy, William Michael	Ch. E	Quanah.
Graduate Quanah High School.		
Myers, Coren Douglass	M. E	Temple.
Graduate Temple High School.		
Mynatt, Jessie Herman	E. E	Gunter.
Northcott, Harold Morgan	E. E	Galveston.
Nuckols, Albert Edwards	C. E	Brownwood.
O'Brien, Floy	E. E	Corsicana.
Graduate State Orphan High School.		
Oglesby, Enslie Orsen	E. E	Mertzon.
Olds, Frederick Hortman	E. E	Denver, Col.
Olson, Oscar Rudolph	M. E	Galveston.
Olson, Palmer Henry	C. E	Clifton.
Graduate Clifton High School.		
Olson, Thomas Albert	M. E	Genoa.
Parker, Herbert Edward	C. E	Bay City.
Parks, Ollie Jordan	E. E	Bryan.
Patterson, Edwin Bridgers	E. E	Clarendon.
Pearce, Jack McMahon	E. E	Lake Charles, La.
Peyton, Harry Lamar	M. E	Waco.
Graduate Waco High School.		
Pinkston, Lucian Albert	C. E	Corsicana.
Pitts, Claude Noel	E. E	Onalaska.
Powell, John Burr	C. E	Baird.
Preston, Herbert Rodney	E. E	Bryan.
Randlett, Samuel Lathrop	E. E	Lancaster.
Rees, Martin Loren	E. E	Center Point.
Regenbrecht, Ferdinand	E. E	Sealy.
Graduate Sealy High School.		
Riesner, Edmund Laritz	C. E	Houston.
Robertson, James Evander	Arch	Austin.
Robertson, James Linton	M. E	Bryan.
Rosenfield, Joseph Levy	E. E	Galveston.
Rosprim, Alphonse Joseph	Arch	Bryan.
Royse, Frank Alexander	E. E	Royse City.
Rudasill, Aubrey	C. E	Bartlett.
Runge, Hans Eyl	T. E	Galveston.
Rutan, Wilton Lynn	Arch	Port Arthur.
Graduate Port Arthur High School.		
Sanders, Irl Nowlin	M. E	Bryan.
Graduate Bryan High School.		
Sawyer, Horace Adali	C. E	Fate.
Schadt, Ewald Keller	E. E	Galveston.
Graduate Ball High School.		
Scheultz, George Wright	E. E	Houston.
Schornstein, Raphael M	Arch	Galveston.

Scott, Bennett Willie	M. E.	Colorado.
Scott, Harper Anderson	C. E.	San Antonio.
Graduate San Antonio Academy.		
Seele, Hermann Hugo	E. E.	New Braunfels.
Graduate New Braunfels High School.		
Short, James Clay	C. E.	Bandera.
Singletary, Harry Hunter	E. E.	Atlanta.
Slauter, Lee B.	Ch. E.	Fort Worth.
Graduate Fort Worth High School.		
Smith, Jule Redwine	C. E.	Henderson.
Sobel, David	C. E.	Beaumont.
Graduate Beaumont High School.		
Spurlock, Robert Floyd	E. E.	Beaumont.
Graduate Beaumont High School.		
Sramek, John N	M. E.	Bryan.
Staples, Thomas Malcolm	M. E.	Wylie.
Stephens, Uel	C. E.	Lometa.
Graduate Lometa Public School.		
Stieber, Charles Hostrasser	M. E.	Rock Springs.
Stoner, Charles Dewitt	E. E.	Lakeland, Fla.
Taliaferro, Champ Lee, Jr	T. E.	Henderson.
Taylor, Leslie	E. E.	Blum.
Graduate Blum High School.		
Taylor, Otis	E. E.	Corsicana.
Graduate State Orphan High School.		
Taylor, Richard Lee	M. E.	Clarksville.
Graduate Clarksville High School.		
Tippett, Cleveland	E. E.	Greenville.
Tips, Eugene Conrad	Arch.	Seguin.
Tomlinson, James Alexander	M. E.	Lott.
Van Hutton, Edgar	E. E.	LaGrange.
Wagnon, Dan Peter	Arch.	Mathis.
Ward, Henry Gohlke	M. E.	San Antonio.
Watling, Foster Edgerton	M. E.	Los Angeles, Cal.
Werner, Arthur M	E. E.	Mt. Pleasant.
White, Jesse Edgbert	E. E.	Gainesville.
Graduate Gainesville High School.		
Whitener, Harry William	M. E.	Burton.
Wight, Schuyler Byron	M. E.	Odessa.
Williamson, Philip Gathings	C. E.	Covington.
Winston, Milton Montgomery	E. E.	San Marcos.
Wipprecht, Read	Arch.	Bryan.
Yakel, Henry Edwin	M. E.	Marshall.
Yeates, Clarence Carpenter	E. E.	Katy.
Zedler, Otto Frederick Christian	E. E.	Ottine.

Total, 189.

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

Second Year.

Crockett, Claude	Prosper.
Cover, William Joseph	San Antonio.
Mittanck, Erwin Albert	Kerrville.

Total, 3.

First Year.

Ballew, Henry Logan	Honey Grove.
Caldwell, Eugene H	Brownwood.
Corley, James Robert	Flatonia.
Donohue, Edward Charles	El Paso.
Duncan, Donald Lee	Dallas.
Dycus, Gage	Dallas.
Garitty, John Patterson	Corsicana.
Higginbotham, Graily Hewell	Lakewood, N. M.
Jones, William Echols	Utopia.

Jourdan, Harry	Del Rio.
Love, William Oscar	Gorman.
Lyne, Eugene Scott	Houston.
McArthur, Olia Alexander	Jacksonville, Ala.
Mower, Robert Lefferts	Corsicana.
Muse, Willard Burt	Dallas.
O'Brien, Jack	Galveston.
Reynolds, James Boone	Buck.
Roberts, McClellan	Corsicana.
Spake, William Edwin	Dallas.
Turner, Albert William, Jr	Cuero.
Wolters, Gus	Shiner.
Graduate Shiner Public School.	
Wood, Robert Burns	Enid, Okla.

Total, 22.

Unclassified.

Bower, Walter Olin	A. E	Stephenville.
Carson, William Willis	E. E	Sherwood.
Graduate Sherwood High School.		
Eason, Claud Frank	E. E	Nacogdoches.
Gentsch, Horace Stokes	E. E	College Station.
Phillips, Frank Robert	T. E	Perry.
Rice, John D	C. E	Hillsboro.
Royer, Lloyd David	M. E	Denver, Colo.
Smith, William Wiley	C. E	McKinney.
Graduate McKinney High School.		

Total, 8.

Special Students.

Arnold, Guy Renfro	Arch	Rockdale.
Elliott, Walton Henderson	Arch	Greenville.
Graduate Greenville High School.		
Ervin, Manvel	Arch	Fort Worth.
Garwood, George Calvin	Arch	San Antonio.
Graduate Peacock Military College.		
Hamerly, Jewell Silas	M. E	Oakhurst.
Lacy, George Harry	Arch	Marble Falls.
Graduate Valley Mills High School.		
von Rosenberg, Leslie August	Arch	Hallettsville.
Graduate Hallettsville High School.		

Total, 7.

SUMMARY OF ATTENDANCE.

School of Agriculture.

Graduate students	2	
Seniors	45	
Juniors	51	
Sophomores	124	
Freshmen	155	

Two-Year Courses.

Second year	26	
First year	96	
Unclassified	7	
Special	8	
Total in the School of Agriculture		514

SCHOOL OF ENGINEERING.

Graduate Students.

Chemical Engineering	4	
Civil Engineering	3	
Electrical Engineering	2	
Mechanical Engineering	3	12

Seniors.

Architectural Engineering	8	
Chemical Engineering	3	
Civil Engineering	38	
Electrical Engineering	24	
Mechanical Engineering	9	
Textile Engineering	4	
		86

Juniors.

Architecture	5	
Chemical Engineering	2	
Civil Engineering	15	
Electrical Engineering	22	
Mechanical Engineering	20	
		64

Sophomores.

Architecture	14	
Chemical Engineering	6	
Civil Engineering	28	
Electrical Engineering	36	
Mechanical Engineering	16	
Textile Engineering	8	
		108

Freshmen.

Architecture	21	
Chemical Engineering	5	
Civil Engineering	45	
Electrical Engineering	73	
Mechanical Engineering	39	
Textile Engineering	6	
		189

Two-Year Course in Textile Engineering.

Second year	3	
First year	22	
Unclassified	8	
Special	7	
		40
Total in the School of Engineering		499
Total Attendance, Regular Session		1013
Short Winter Course in Agriculture		109
Summer School of Cotton Classing		6
Total Enrollment, Session 1912-13		1128

REGIMENTAL ORGANIZATION 1912-13.

The Corps of Cadets is organized as a Regiment of Infantry of three Batallions, with a Regimental Band and a Bugle Corps.

First Lieutenant Levi G. Brown, Cavalry, United States Army,
Commandant of Cadets.

Quartermaster Sergeant J. M. Kenny, United States Army, Retired,
Assistant Commandant.

B. P. Day, Chief Musician.

LINEAL RANK OF OFFICERS AND NON-COMMISSIONED OFFICERS OF THE CADET REGIMENT.

Colonel.

1. Baylor, R. E.

Lieutenant Colonel.

1. Orth, W. A.

Majors.

1. Borchert, W. C.
2. Hays, F. P.
3. Bell, T. L., Jr.

Captains.

1. Waters, J. J., Jr.
2. Scofield, J. A.
3. Lammers, E. S.
4. Miller, W. Z.
5. Jackson, J. W.
6. Fries, L.
7. Whitfield, C. A.
8. Oliver, C.
9. Bowler, S. E.
10. Lienhard, L. V.
11. Miller, R. S.
12. Stevens, A. C.
13. Hale, J. D.
14. Holland, C. J.
15. Burleson, W. H.
16. Schroeter, R. R.
17. Fischer, H. H.

First Lieutenants.

1. Weinert, H. G. H.
2. Chinski, C. C.
3. Jones, H. P.
4. Tolbert, W. S.
5. Cain, R. W.
6. Brown, J. F.
7. Collins, J. W. H.
8. Eversberg, E. A.
9. Laake, E. W.
10. Joplin, J. F.
11. Donoho, W. T.
12. Davis, J. N.
13. Cardwell, W. W.
14. Anderson, R. O.
15. Lyles, J. V.
16. Dowell, H. B.
17. Torrence, W. C.

Second Lieutenants.

1. Ehlinger, R. B.
2. Montgomery, F. L.
3. Spence, T. R.
4. Olson, J. N.
5. Langdon, Y. M.
6. Ohlendorf, W.
7. Lane, G. J.
8. Eagleston, E. G.
9. Young, M. H.
10. Roberts, C. A.
11. Rollins, J. G.
12. Schaefer, S. E.
13. Ragsdale, T. M.
14. Lott, J. G.
15. Hudgins, L. A.
16. Harrison, E. W.
17. Kraege, A. C. A.
18. Sayers, A. F.
19. Nolte, R. W.
20. Taylor, A. B.
21. Tucker, D. H.
22. Hill, J. R.
23. Lown, F. D.
24. Caldwell, R. E.
25. Gillette, P. C.
26. Fountain, E. J.
27. French, W. A.
28. Lockett, W. R.
29. Connellee, E. T.
30. Cox, R. W.
31. Langford, E.
32. Walzem, L. F.
33. Anderson, J. V.

Regimental Sergeant Major.

1. Kotzebue, M. H.

Regimental Quartermaster Sergeant.

1. Miller, A. C.

Regimental Ordnance Sergeant.

1. Gibbens, E.

Regimental Commissary Sergeant.

1. Simpson, J. N.

Regimental Color Sergeant.

1. Crockett. W. E.

Chief Trumpeter.

1. Stone, J. M.

Battalion Sergeants Major.

1. Altgelt, G. A.
2. Mayers, H. P.
3. Camp, G. D.

Drum Major.

1. Brundrett, H. M.

First Sergeants.

1. Hoepfner, F. W.
2. Scott, F. L.
3. Parr, V. V.
4. Lenert, A. A.
5. Jordan, G. F.
6. Emmett, C. P.
7. James, O. J.
8. Knox, G. P.
9. Tinker, E. B.
10. Snider, J. B.
11. Vossler, J. M.
12. Powell, L. H.

Sergeants.

1. Wear, H. A.
2. Smith, J. R.
   (Trophy Sergeant.)
3. Bower, W. O.
4. Herrington, J. J.
5. Schmidt, F. H.
6. Davis, T. C.
7. Stroud, M. L.
8. Miller, V. W.
9. Farthing, W. E.
10. Pickens, D. B.
11. Reed, W. N.
12. Broome, W. S.
13. Tanner, E. L.
14. Slay, S. H.
15. McDowell, J. C.
16. Braunig, H. E.
17. Rhodes, J. E.
18. Green, R.
19. Biggers, C. A.
20. Warren, C. B.
21. Booth, G. E.
22. Bradley, E. I.
23. Ayers, E. L.
24. Sparkman, F. A.
25. Peterson, J. A.
26. Schuwirth, W. C.
27. McGinnis, P. T.
28. Goodwin, J. C.
29. Dodson, A. E.
30. Ball, B. C.
31. Irby, A. H.
32. Beasley, W. G.
33. Harrison, J. C.
34. Jennings, A. L.
35. Shiller, H. H.
36. Jones, T. W.
37. Fisher, J. K. G.
38. Lane, G. I.
39. Killough, D. T.
40. Groginski, P.
41. Rollins, M. E.
42. Jenson, J. C.
43. Baker, H. K.
44. Girardeau, E. R., Jr.
45. Cole, N. D.
46. Parker, E.

Corporals.

1. Crockett, C. E.
2. Thornton, J. M.
3. Scott, D. W.
4. Eagleston, C. M. C.
5. Kinnard, A. W.
6. Hinton, W. B.
7. Adriance, G. W.
8. Francis, W. B.
9. Bugbee, J. S.
10. Hogue, E. N.
11. Brumfield, E. B.
12. Gammill, H. H.
13. Bell, J. E.
14. Allen, R. R.
15. Bates, W. H.
16. Bruton, D. D.
17. Trew, R. L.
18. Warren, C. F.
19. Davis, C. J.
20. Mayo, H. M.
21. Wilson, C. S.
22. Dunning, G. R.
23. Braumiller, W. E.
24. Moore, J. H.
25. Glaze, W. O.
26. Hill, M. E.
27. Faber, B. H.
28. Mowery, I. H.
29. Turnage, R. E.
30. McCollum, H. T.
31. Palmer, G. C.
32. Moss, M. A.
33. Greene, O. W.
34. Brown, L. W.
35. Clark, S. F.
36. Wisrodt, C. E. P.
37. Sansom, G. W.
38. Jarrett, E. L.
39. Montague, F. O.
40. Ellis, H. F.
41. Campbell, A. R.
42. Crisp, M. C.
43. Searight, G. A.
44. Bouknight, R. A.
45. Williams, C. W.
46. Stiteler, E. E.
47. Skeeler, W. J.
48. Overstreet, A. M.
49. Coleman, W. C.
50. Clarkson, P. W.
51. Young, R. L.
52. Lynch, H.
53. Garitty, J. P.
54. Skeen, S. D.

ASSIGNMENTS TO ORGANIZATIONS.

Colonel—Baylor, R. E.
Lieutenant Colonel—Orth, W. A.
Captain and Adjutant—Waters, J. J., Jr.
Captain and Quartermaster—Stevens, A. C.
Captain and Ordnance Officer—Bowler, S. E.
Captain and Commissary—Miller, W. Z.
Regimental Sergeant Major—Kotzebue, M. H.
Regimental Quartermaster Sergeant—Miller, A. C.
Regimental Ordnance Sergeant—Gibbens, E.
Regimental Commissary Sergeant—Simpson, J. N.
Regimental Color Sergeant—Crockett, W. E.

The Band.

Captain.
Lienhard, L. V.

First Lieutenant.
Laake, E. W.
Second Lieutenants.
Schaefer, S. E.
Hill, J. R.

Drum Major.
Brundrett, H. M.
Sergeant.
Slay, S. H.

Corporals.
Eagleston, C. M. C.
Faber, B. H.
Green, O. W.
Jarrett, E. L.

Bugle Corps.

Chief Trumpeter.
Stone, J. M.

Corporals.
Garitty, J. P.
Skeen, S. D.

First Battalion.

Major—Borchert, W. C.
First Lieutenant and Adjutant—Lyles, J. V.
Second Lieutenant and Quartermaster—Ehlinger, R. B.
Sergeant Major—Mayers, H. P.

Company A. (Trophy Company)	**Company B.**	**Company C.**	**Company D.**
Captain.	Captain.	Captain.	Captain.
Fischer, H. H.	Fries, L.	Jackson, J. W.	Oliver, C.
First Lieutenant.	First Lieutenant.	First Lieutenant.	First Lieutenant.
Torrence, W.C.	Jones, H. P.	Cain, R. W.	Cardwell, W. W.
Second Lieutenants.	Second Lieutenants.	Second Lieutenants.	Second Lieutenants.
Connellee, E. T. Langford, E. Anderson, J. V.	Lott, J. G. Fountain, E. J.	Spence, T. R. Taylor, A. B. Gillette, P. C.	Ohlendorf, W. Young, M. H. Tucker, D. H.
First Sergeant.	First Sergeant.	First Sergeant.	First Sergeant.
Scott, F. L.	Hoepfner, F. W.	Parr, V. V.	Jordan, G. F.
Sergeants.	Sergeants.	Sergeants.	Sergeants.
Smith, J. R. (Trophy Sergeant) Herrington, J. J. Rhodes, J. E. Ayers, E. L. Beasley, W. G.	Schmidt, F. H. Sparkman, F. A. Girardeau, E. R., Jr.	Biggers, C. A. Peterson, J. A. Rollins, M. E. Baker, H. K.	Davis, T. C. Harrison, J. C. Shiller, H. H. Jenson, J. C.
Corporals.	Corporals.	Corporals.	Corporals.
Crockett, C. E. Braumiller, W. E. Sansom, G. W. Skeeler, W. J.	Gammill, H. H. Palmer, G. C. Searight, G. A. Bouknight, R. A.	Mowery, I. H. Turnage, R. E. McCollum, H. T. Lynch, H.	Bell, J. E. Wisrodt, C. E. P. Overstreet, A. M. Coleman, W. C.

Second Battalion.

Major—Hays, F. P.
First Lieutenant and Adjutant—Weinert, H. G. H.
Second Lieutenant and Quartermaster—Eagleston, E. G.
Sergeant Major—Camp, G. D.

Company E.	**Company F.**	**Company G.**	**Company H.**
Captain. Hale, J. D.	Captain. Miller, R. S.	Captain. Whitfield, C. A.	Captain. Holland, C. J.
First Lieutenant. Davis, J. N.	First Lieutenant. Joplin, J. F.	First Lieutenant. Collins, J. W. H.	First Lieutenant. Eversberg, E. A.
Second Lieutenants. Montgomery, F. L. Kraege, A. C. A.	Second Lieutenants. Lane, G. J. Nolte, R. W.	Second Lieutenants. French, W. A. Lockett, W. R. Cox, R. W.	Second Lieutenants. Ragsdale, T. M. Caldwell, R. E.
First Sergeant. Snider, J. B.	First Sergeant. Powell, L. H.	First Sergeant. James, O. J.	First Sergeant. Lenert, A. A.
Sergeants. Bower, W. O. Stroud, M. L. Warren, C. B. Jennings, A. L.	Sergeants. Miller, V. W. Schuwirth, W. C. McGinnis, P. T. Lane, G. I.	Sergeants. Wear, H. A. Braunig, H. E. Jones, T. W. Parker, E.	Sergeants. Farthing, W. E. Booth, G. E. Killough, D. T.
Corporals. Kinnard, A. W. Hogue, E. N. Warren, C. F. Clark, S. F.	Corporals. Hinton, W. B. Moss, M. A. Brown, L. W. Montague, F. O.	Corporals. Francis, W. B. Bruton, D. D. Ellis, H. F. Clarkson, P. W.	Corporals. Davis, C. J. Wilson, C. S. Campbell, A. R. Crisp, M. C.

Third Battalion.

Major—Bell, T. L., Jr.
First Lieutenant and Adjutant—Chinski, C. C.
Second Lieutenant and Quartermaster—Olson, J. N.
Sergeant Major—Altgelt, G. A.

Company I.	**Company K.**	**Company L.**	**Company M.**
Captain. Burleson, W. H.	Captain. Schroeter, R. R.	Captain. Lammers, E. S.	Captain. Scofield, J. A.
First Lieutenant. Donoho, W. T.	First Lieutenants. Brown, J. F. Dowell, H. B.	First Lieutenant. Tolbert, W. S.	First Lieutenant. Anderson, R. O.
Second Lieutenants. Roberts, C. A. Harrison, E. W.	Second Lieutenants. Sayers, A. F. Walzem, L. F.	Second Lieutenants. Langdon, Y. M. Hudgins, L. A.	Second Lieutenants. Rollins, J. G. Lown, F. D.
First Sergeant. Emmett, C. P.	First Sergeant. Tinker, E. B.	First Sergeant. Vossler, J. M.	First Sergeant. Knox, G. P.
Sergeants. Pickens, D. B. Irby, A. H. Fisher, J. K. G.	Sergeants. Reed, W. N. Green, R. Goodwin, J. C. Groginski, P.	Sergeants. Broome, W. S. Ball, B. C. Cole, N. D.	Sergeants. Tanner, E. L. McDowell, J. C. Bradley, E. I. Dodson, A. E.
Corporals. Adriance, G. W. Bugbee, J. S. Moore, J. H. Young, R. L.	Corporals. Scott, D. W. Brumfield, E. B. Allen, R. R. Mayo, H. M.	Corporals. Thornton, J. M. Dunning, G. R. Williams, C. W. Stiteler, E. E.	Corporals. Bates, W. H. Trew, R. L. Glaze, W. O. Hill, M. E.

THE HOWELL TROPHY.

The Howell Trophy is a handsome Texas Flag, presented to the College in 1903 by Mr. W. S. Howell, of Bryan, Texas. A competitive drill is held each session during Commencement to determine the best drilled company. The successful company is designated as the "Trophy Company" and carries the Trophy during the following session. It is authorized to elect a "Trophy Sergeant" who is the Color Bearer.

The Trophy Company for the session of 1912–13, is Company "A."

DEGREES AND HONORS.

(Conferred June, 1912.)

DEGREE OF MECHANICAL ENGINEER.

Bechert, F. J
B. S., A. & M. College of Texas, 1911.

McMillan, L. B.
B. S., A. & M. College of Texas, 1911.

DEGREE OF BACHELOR OF SCIENCE.

In Agriculture.

Brown, J. J.
Connor, T. P.
Dickson, R. E.
Ehlinger, G. E.
Farmer, J. S.
Francis, A. J.
Figh, J. R.
Hohn, C.
Jenson, W. M.
Johnson, T. L.
Jones, G. M.
Kenedy, E. J.
Langston, J. A.
Lindley, T. L. P.
McDowell, C. H.
McEachern, C. A.
McMillan, F. N.
Moser, E. F.
Patterson, J. C.
Rosa, R. R.
Shearer, T. R.
Souther, S. C.
Thaxton, H.
Wickes, H. G.
Youngblood, Tom.
(As of 1905)

In Architectural Engineering.

Adams, Q.
Barnitz, R. B.
Geren, P. M.
Griesenbeck, C. H.
Mansfield, B. J.
von Rosenberg, H. J.

In Chemical Engineering.

Newton, J. W.

In Civil Engineering.

Atwell, C. S.
Block, J. A.
Boyett, H.
Buckner, J. F.
Burleson, Lieut. R. C.
(As of 1901)
Butler, J. V.
Callaway, W. H.
Carrington, H.
Carruthers, R. B.
Dellis, J. L.
Devine, P. S.
Dickson, J. L.
Dwyer, T. J.
Fries, J.
Haile, C. R.
Hoefle, K. F.
Krueger, C. C.
McCullough, R. E.
Miller, J. D.
Mistrot, G. A.
Scarborough, J.
Schaedel, C. T.
Schlom, C. H.
Sory, E. G.
Stewart, J. E.
Taylor, L. T.
Underwood, H.
Watkins, H. B.
Wilson, A. G.

In Electrical Engineering.

Ashford, G. W.
Atwell, B. D.
Ball, W. A.
Bozeman, J. R.
Cabaniss, W. M.
Carter, T. J.
Chaney, L. P.
Christen, J. C.
Church, W. G.
Collins, A. B.
Cox, H. T.
Eppler, H. G.
Fairbairn, G. C.
Goodwin, W. M.
Green, C. E.
Hemphill, G. H.
Hunt, N. H.
Johnson, M. L.
McFarland, J. L.
Mangum, R. L.
Martin, S. P.
Meece, B. L.
Shropshire, L. O.
Templeton, B. O.
Washington, W. C.
Welborn, G. M.

In Mechanical Engineering.

Caldwell, J. R.
Curtin, W. H.
Forsyth, J. M.
Huth, T. G.
Morley, M. D.
Nave, G. F.
Partridge, R. C.
Romberg, C. B.
Wendtland, W. A.

CERTIFICATES IN TWO-YEAR COURSES.

In Agriculture.

Anderson, R. J.
Boney, R. W.
Brothers, J. R.
Burk, S. M.
Cocanougher, C. M.
Conlisk, L. J.
Ellwood, C. A.
Goen, C. F.
Green, L. M.
Haller, R. B.
Lambert, H. G.
Luedtke, E. R.
Marschall, W. I.
Millender, H. C.
Miller, G. E.
Pugh, M. S.
Reese, A. F.
Ross, W. I.
Simons, R. V.
Staben, E. O.
Taylor, C. E.

In Textile Engineering.

Glover, P. J.
Harris, J. D.

DISTINGUISHED STUDENTS.

At the end of each session students who have during the year received no term grade below "B," and who have no deficiency in "Practice," are announced as "Distinguished."

SENIOR CLASS.

Morley, M. D.

JUNIOR CLASS.

Ohlendorf, W., Tilton, L. W.

FRESHMAN CLASS.

Bugbee, J. S.

GRADUATING CLASS.

(With Subjects of Theses.)

Graduate Courses.

(For the Degree of Mechanical Engineer.)

Bechert, Fred John; McMillan, Luther Burchard—(Substituted other work for Thesis.)

Course in Agriculture.

(For the Degree of Bachelor of Science in Agriculture.)

Brown, Joe Joshua, Cherokee, Texas; McMillan, Frank Ney, Calvert, Texas—Ensilage for Beef Production.

Connor, Thomas Patrick, Red Oak, Texas; Patterson, John Carr, Clarendon, Texas—The use of Starters in Butter Making.

Dickson, Roy Esther, Greenville, Texas; Hohn, Caesar, Yorktown, Texas—History and Development of Agriculture and Manual Training in the Public Schools of Texas.

Ehlinger, George Elo, LaGrange, Texas; Wickes, Henry Gillette, Bryan, Texas—Development of an Experimental Breeding and Feeding Farm at College Station.

Farmer, Joseph Sayers, Junction, Texas; McEachern, Carl Angus, Austin Texas—Equipment and Management of a Modern Dairy Farm at College Station.

Figh, John Rufus, Dallas, Texas—Silo Construction and Ensilage.

Francis, Andrew Jones, College Station, Texas—Anatomy of Distoma Hepaticum.

Jenson, William Marion, Coolidge, Texas; Langston, John Adams, Cleburne, Texas—Comparative Tests of Some Milk Bacteria Under Varying Conditions.

Johnson, Thomas Loraine, Lissie, Texas—The Potency of Hog Cholera Serum.

Jones, George Mitchell, Smithville, Texas; McDowell, Cincinnatus Hamilton, Taft, Texas; Shearer, Thomas Rodney, Houston, Texas—Laboratory Studies of the Soils of a Corpus Christi Truck Farm.

Kennedy, Edwin Jay, Houston, Texas; Souther, Sim Cruse, Rosebud, Texas—A Physical and Chemical Study of the Soils of Grayson County.

Lindley, Thomas Lee Pendleton, Wortham, Texas; Moser, Ernest Frederick, Dallas, Texas—The Angora Goat Industry in Texas.

Rosa, Ralph R., Sandy, Texas; Thaxton, Harold, Mason, Texas—A Comparison of Some Texas Grown Feed Stuffs for Mutton Production.

Youngblood, Tom, Davis, Okla. (Class of 1905)—Proposed Reorganization of the Dairy Farm of the A. & M. College of Texas.

Course in Architectural Engineering.

(For the Degree of Bachelor of Science in Architectural Engineering.)

Adams, Quinlan, Bryan, Texas; Barnitz, Richard B., San Antonio, Texas—Design of a Bank Building.

Geren, Preston Murdock, Sherman, Texas—Design of Portions of Foundation and of Steel Frame for Twelve-Story Office Building.

Mansfield, Bruce Jefferson, Columbus, Texas—Design of School Building.

Von Rosenberg, Herbert John, Hallettsville, Texas—Design of a Mercantile Building.

Griesenbeck, Clyde Hugo, San Antonio, Texas—Design of an Apartment House.

Course in Chemical Engineering.

(For the Degree of Bachelor of Science in Chemical Engineering.)

Newton, John Wharton, Bryan, Texas—Comparative Study of the Refining of Hotpressed and Coldpressed Cottonseed Oil with Caustic Soda.

Course in Civil Engineering.

(For the Degree of Bachelor of Science in Civil Engineering.)

Atwell, Charles S., Hutchins, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Block, Jake Albert, Houston, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Boyett, Horace, Bryan, Texas—Survey and Estimate for Improvement of Roads on the College Campus.

Buckner, John Franklin, Glenfawn, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Burleson, Lieut. Richard Coke, San Antonio, Texas—(Class of 1901)—The Action of Nickel Steel Rings Under Stress from Internal Strains.

Butler, Jesse Vernon, Nederland, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Callaway, William Henry, Charco, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Carrington, Henry, Bay City, Texas—The Design of a Railroad Bridge of 182 ft. Span.

Carruthers, Robert Bruce, Coryell, Texas—Plans and Estimates for a Gravel Road Between Bryan and College Station.

Dellis, Joseph Lloyd, Abilene, Texas—The Design of a Railroad Bridge of 196 ft. Span.

Devine, Patrick Sarsfield, Laredo, Texas; Krueger, Carl Clifton, San Antonio, Texas—Tests of Building Brick.

Dickson, John Lafayette, Velasco, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Dwyer, Thomas Joe, El Paso, Texas—The Design of a Railroad Bridge of 168 ft. Span.

Fries, John, San Antonio, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Haile, Charles Radcliffe, San Antonio, Texas—The Design of a Railroad Bridge of 168 ft. Span.

Hoefle, Karl Fred, Velasco, Texas—The Design of a Railroad Bridge of 196 ft. Span.

McCullough, Robert Edgar, Houston, Texas; Underwood, Harris, Houston, Texas—Comparative Tests of the Strengths of Cement Mortars as Affected by the Character of the Sand Used.

Miller, J. D., Comanche, Texas—The Design of a Railroad Bridge of 182 ft. Span.

Mistrot, Gustave Antoine, Jr., Houston, Texas—The Design of a Railroad Bridge of 168 ft. Span.

Scarborough, John, Corsicana, Texas—The Design of a Railroad Bridge of 196 ft. Span.

Schaedel, Charles Theodore, Bay City, Texas—The Design of a Railroad Bridge of 182 ft. Span.

Schlom, Charles Hyman, Houston, Texas—The Design of a Railroad Bridge of 168 ft. Span.

Sory, Eugene Gilbert, Mount Enterprise, Texas—The Design of a Railroad Bridge of 154 ft. Span.

Stewart, Joe Edgar, Sandy, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Taylor, Lee Thomas, San Augustine, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Watkins, Homer Bailey, Bowie, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Wilson, Addison George, McKinney, Texas—The Design of a Railroad Bridge of 182 ft. Span.

Course in Electrical Engineering.

(For the Degree of Bachelor of Science in Electrical Engineering.)

Ashford, George William, Diboll, Texas; Atwell, Benjamin D. Jr., Hutchins, Texas—Test of a Direct Connected Gasoline Engine Driven Generator Set.

Ball, William Armour, San Diego, Texas; Cabaniss, Walter Marcus, Garland, Texas; Carter, Thomas Jefferson, Celeste, Texas—Test of the Bryan Power Plant.

Bozeman, Jeff Ray, Dayton, Texas; Hemphill, Grover Hicks, Tyler, Texas—A Study of Electric Elevators.

Chaney, Leonard Press, Beaumont, Texas—Plans and Specifications for the Electrification of the Bryan College Interurban Railway.

Christine, Joseph Charles, Laredo, Texas; Church, Warren George, Farmersville, Texas—Test of the Bryan Power Plant.

Collins, Allan Buren, Mexia, Texas; Shropshire, L. Otis, Plainview, Texas—An Appraisal of the Electric Light Lines of the A. & M. College of Texas, and an Estimate of the Cost of Putting Certain Lines Underground.

Cox, Henry Taylor, Hereford, Texas—Rewinding a Five-horse Power Induction Motor for Two Speeds.

Eppler, Henry Gilford, Cisco, Texas—Johnson, Melville Lockett, Stockdale, Texas—A Study of the Parallel Operation of the Generators of the New Power Plant of the A. & M. College of Texas.

Fairbairn, George Calvin, Mineral Wells, Texas—Rewinding a Three-horse Power Induction Motor.

Goodwin, William Mulvey, Beaumont, Texas; Mangum, Raleigh Lee, Sabine Pass, Texas; Meece, Brown Louis, Livingston, Texas—A Study of Watt-hour Meters Under Service Conditions.

Green, Charles Elmer, Peniel, Texas; Hunt, Noah Houston, Oakwood, Texas—An Investigation of the Advisability of Purchasing Power from Bryan for Use at the College.

McFarland, James Lee, Santa Anna, Texas; Martin, Samuel Paul, Bryan, Texas—The Design of an Electric System for the Bryan College Interurban Railway.

Templeton, Bryce Osborn, Cleburne, Texas—A Study of Alternating Current Rectifiers.

Washington, William Claude, Austin, Texas—The Design and Reconstruction of Two Commercial Transformers.

Welborn, George M., Palestine, Texas—(Substituted other work for Thesis).

Course in Mechanical Engineering.

(For the Degree of Bachelor of Science in Mechanical Engineering.)

Caldwell, James Robert, San Marcos, Texas; Forsyth, James Milen, McKinney, Texas—Construction and Test of a Four-Cycle Gasoline Engine.

Curtin, William Henry, Houston, Texas; Nave, Gordon Fletcher, Kenedy, Texas—Construction and Test of a Four-Cycle Gasoline Engine.

Huth, Theodore George, San Antonio, Texas; Partridge, Roscoe Conklin, Munday, Texas—An Experimental Study of the Airlift Method of Pumping Water.

Morley, Marcus DeLafayette, Fort Worth, Texas; Romberg, Carl Bernard, Holland, Texas; Wendtland, Willie Armen, Shiner, Texas—Test of a Diesel Engine.

ALUMNI.

(Association Organized 1886.)

ORGANIZATION FOR 1912-1913.

HAL MOSELEY, Dallas........................President
S. A. McMILLAN, College Station................1st Vice President
G. B. OGLESBY, Gordonville......................2ndVice President
A. M. FURGUSON, Sherman.....................3rd Vice President
A. MITCHELL, College Station..................Secretary-Treasurer
F. K. McGINNIS, Terrell..............Member Executive Committee

Executive Committee.

HAL MOSELEY. F. K. McGINNIS. A. MITCHELL.

On the following pages are given the names of all graduates of the College, with the courses of study pursued and the degrees obtained; their occupations and residences are also given as far as known. The alumni are requested to aid the Secretary of the Association in making the roll as accurate as possible. Each alumnus should send the Secretary a postal card at the opening of each session, giving his address and occupation.

From the opening of the College in 1876 to its reorganization in 1880, the studies were elective, and led to appropriate degrees. Degrees received in this interval are noted in the list of names.

From 1881 to 1887 there were two prescribed courses, the Agricultural and the Mechanical, but no degrees were given.

From 1888 to 1895 there were four prescribed courses, leading to the degrees of Bachelor of Scientific Agriculture (B. S. A.); Bachelor of Civil Engineering (B. C. E.); Bachelor of Scientific Horticulture (B. S. H.); Bachelor of Mechanical Engineering (B. M. E.).

From 1895 to 1901 the four prescribed courses remained the same, but the degree in each was Bachelor of Science (B. S.), the particular course being specified in the diploma.

In 1901 the Horticultural course was merged with the Agricultural, in 1903 the course in Electrical Engineering was added, in 1904 the course in Textile Engineering, in 1905 the course in Architectural Engineering, in 1908 the course in Chemical Engineering, and in 1909 the course in Architecture, making eight regular courses leading to the degree of Bachelor of Science (B. S.) in Agriculture, in Archetecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering and in Textile Engineering.

The Courses of study are indicated by the use of Roman numerals, as follows:

I. Agriculture.
II. Horticulture.
III. Mechanical or Mechanical Engineering.
IV. Civil Engineering.
V. Electrical Engineering.
VI. Textile Engineering.
VII. Architectural Engineering.
VIII. Chemical Engineering.
IX. Architecture.

Names of deceased alumni are marked with an asterisk.

ABBOTT, E. G., 1894, IV, Captain Coast Artillery, United States Army, Fort Wood, Bedloe's Island, N. Y.
ABBOTT, H. T., 1898, II, Bookkeeper, 4010 Cedar Springs, Dallas.
ABNEY, CARLTON C., 1905, IV, Bank Clerk, Lampasas.
ABNEY, G. R., 1906, IV, Civil Engineer, Eagle Lake.
ABRAHAMS, J. E., 1900, III, Cashier, with Jos. Landa, New Braunfels.
*ABRAHAMS, M. L., 1903, III.
ACKER, L., 1902, IV, Roadmaster, H. & T. C., Ennis.
ADAMS, R. E., 1910, IV, Hardware Merchant, Santa Anna.
ADAMS, A. S., 1895, IV, Builders' Supply, Dallas.
ADAMS, F. L., 1892, I, Farmer, Stafford.
ADAMS, LEM, 1908, IV, Draftsman, Oregon Short Line, Pocatello, Idaho.
ADAMS, Q., 1912, VII, with Cravens & Cage, Houston.
ADAMS, T. A., 1908, VI, Mining Engineer, Inde Gold Mining Co., Inde, Durango, Mex.
ADICKES, C. F., 1910, IV, Fred A. Jones Co., Dallas.
ADKISSON, W. T., 1910, IV, U. S. Eng. Corps, Shreveport.
*ADRIANCE, D., 1886, I, M. S., 1890, Bryan.
AGUAYO, N. A., 1904, III, Parass, Mex.
AHRENBECK, W. T., 1891, III, Minister, Huntsville.
AKERS, M. E., 1902, IV, Rice Farmer, Richmond.
ALDWELL, R. E., 1909, V, Asst. Cashier, First National Bank, Sonora.
ALEXANDER, D. E., 1880, Fort Worth.
ALEXANDER, R. L., 1902, IV, 320 Hutton Bldg., Spokane, Wash.
ALLEN, F., 1906, V, Campbellton.
ALLEN, L. E., 1881, III, Manager Allen's City Drug Co., Marlin.
ALLEN, W. H., 1888, I, Physician and Surgeon, Marlin.
ALTGELT, E. J., 1892, IV, Farming, San Antonio.
ALTGELT, E. S. 1904, IV, Civil Engineer, San Antonio, Box 902.
AMSLER, L. D., 1889, III, Cashier Farmers' National Bank, Hempstead.
AMTHOR, A. W., 1895, IV, Civil Engineer for Brownsville Land and Irrigation Co., Brownsville.
ANDERSON, W. D., 1890, I, Manager Ice Works, Waxahachie.
ANDREWS, V., 1884, III, Physician, Floydada.
ARMSTRONG, M. F., 1882, III, Real Estate and Banking, Mission.
ARMSTRONG, J. F., 1906, III, Mining, Guanajuato, Mexico, Box 33.
ARNESON, E. P., 1910, IV, Medina Irrigation Co., San Antonio.
ARNOLD, E. C., 1906, III, Chemist for Inde Gold Mining Co., Inde, Durango, Mexico.
ASHFORD, G. W., 1912, V, General Elec. Co., Schenectady, N. Y.
ASHTON, JOHN, 1906, I, Ranchman, Linares, N. L., Mexico.
ASTIN, E. H., 1899, III, Planter, Mumford.
ATWELL, B. D., Jr., 1912, V, W. E. & M. Co., Wilkinsbury, Pa.
ATWELL, C. S., 1912, IV, Transitman for Texas Speedway, Hutchins.
BAADE, J. E., 1911, VII, Waco.
BACKUS, U. J., 1890, III, Farmer, Eagle Pass.
BAILEY, C. C., 1892, IV, Cashier, First National Bank, Bartlett.
BAINES, H., 1906, V, Traffic Dept., S. W. Tel. & Tel. Co., Dallas.
BAKER, L. A., 1910, V, Westinghouse Electric Co., 500 Kelly St., Wilkinsburg, Pa.
BAKER, J. J., 1879, Merchant, Homer, La.
BAKER, SEARCY, 1882, III, Assistant Manager South Texas Lumber Co., Houston.
BALL, W. A., 1912, V, Engineer, Corpus Christi.
BALLARD, LUKE, L., 1905, I, Stock Farmer, Waco.
BANKS, A. L., 1879, B. S., 1892, M. S., 1895, Professor of Mathematics, College of Industrial Arts, Denton.
BARCLAY, R. L., 1898, III, Farmer, Temple.
BARHAM, G. S., 1902, III, Physician, Nacogdoches.
BARHAM, R. E., 1903, IV, Engineer, Nacogdoches.
BARNES, G. W., 1911, I, Extension Dept. A. & M. College, Stillwater, Okla.
BARNES, R. M., 1898, III, General Merchant, Abilene.
BARNES, S. E., 1899, I, Dairy Investigation, United States Department of Agriculture, R. F. D. No. 2, Knoxville, Tenn.
BARNITZ, R. B., 1912, VII, San Antonio.
BARWIS, I. G., 1910, VII, Architectural Draftsman, Fairfield, Iowa.
BASS, R. O., 1909, V, Electrician, Los Angeles, Cal.
BATTE, T. R., 1902, IV, Chief Engineer, Rio Bravo Oil Co., Houston.
BAUER, F., 1904, III, Ginner, Burton.
BAUM, J. A., 1903, IV, Civil Engineer, Georgia.
BEALL, V. Z., 1908, IV, Student M. I. of Tech., 263 Newbury, Boston.
BEAN, B., 1907, IV, C. E., 1909, Civil Engineer, Los Angeles, Cal.

BEAUREGARD, R. T., 1910, IV, Medina Irrigation Co., San Antonio.
BECHERT, F. J., 1911, III, M. E., 1912, Instructor, M. E. Dept., College Station.
BECKER, ADOLPH, 1905, I, Merchant, Brenham.
BEEMAN, T. R., 1903, IV, Locating Engineer, C., M. & St. P. R. R., 617 White Bldg., Seattle Wash.
BEESLEY, T. J., 1908, III, Manager Rockdale Oil Co., Rockdale.
BEESLEY, W. S., 1892, IV, Merchant, Abilene.
BEILHARZ, W. E., 1903, III.
BENJAMIN, J. W., 1905, IV, City Engineer, Cuero.
BENTLEY, C. N., 1910, V, Northern Electric Co., Montreal, Canada.
BERNAY, C. L., 1904, IV, Paving and Roads Dept., Texas Oil Co., Houston.
BEYER, F. C., 1892, III, Mgr. Mason Ice and Power Co., Mason.
*BIBERSTEIN, F. R., 1882, III.
BIERING, S. R., 1902, IV, Chief Claim Clerk, G., C. & S. F. Railway, Galveston.
BING, B. L., 1910, I, Farmer, Waller.
BITTLE, P. B., 1896, I, Superintendent City Schools, Henderson.
BITTLE, T. C., JR., 1900, IV, care C. C. Todd, San Antonio.
BITTLE, A. W., 1894. I, Professor Mathematics, La. Ind. Institute, Lafayette, La.
BIVINS, M., 1907, V, Mattress Manufacturer, Longview.
BLACK, M., Minister, Sterling City.
BLACK, R. S., 1907, IV, Nacoyari, Sonora, Mexico.
BLACKALLER, G. A., 1911, I, Stockman, Frio Town.
BLACKMON, G. H., 1910, Agriculturist, San Antonio.
BLAKE, H. H., 1907, IV, Markham.
BLAKE, T. W., 1904, I, Gen. Sales Mgr. South Texas Lumber Co., Houston.
*BLAKEMORE, T. E., 1880.
BLAND, L. F., 1899, I, Medical Student, Memphis, Tenn.
BLEDSOE, F. F., 1880, Minister, Navasota.
BLOCK, J. A., 1912, IV, Houston.
BLOOR, A. W., 1895, I, Attorney, Austin.
BLOUNT, S. L., 1896, I, U. S. Veterinary Inspector, Bureau of Animal Industry, Department of Agriculture, 913 W. Lenda St., Fort Worth.
BOCOCK, J. H., 1894, I, Traveling Salesman, Thaxton, Va.
BOETTCHER, R. B., 1900, III.
BOGEL, W. W., 1907, V, Marfa.
BORN, THOMAS C., 1905, I. General Contractor, Houston.
BOWER, W. E. 1908, V, Farmer, R. F. D. No. 5, Hico.
BOYCE, CHARLES W., 1905, I, Farmer, Charco.
BOYCE, W., JR., 1907, IV, Roadmaster, C. G. W. R. R., Chicago, Ill.
BOYETT, H., 1912, IV, Bryan.
BOYKIN, R. E., 1892, III, Teacher.
BOZEMAN, J. R., 1912, V, Unsan, Korea.
BRANDT, R. L., 1906, III, Draftsman, Box 808, San Antonio.
BRANNIN, C. P., 1909, VI, Educational and Vocational Sec., Y. M. C. A., Dallas.
*BRAUN, P., 1888, San Antonio.
BRAUNIG, V. H., 1910, V, Asst. Supt. Elect. Dept., San Antonio Gas and Elec. Co., San Antonio.
BRINKMANN, H., 1906, III, 1907, V, 12 Barrett St., Schenectady, N. Y.
*BRITTINGHAM, W. F., JR., 1890, IV.
BRETSCHNEIDER, W., 1898, IV, Assistant Superintendent M. of W. Dept., T. & N. O. R. R., Houston.
BREWER, H. A., 1899, III, Farmer, R. F. D. No. 3, Dale.
BRICE, H. A., 1910, IV, Fred A. Jones Co., Birmingham, Ala.
BRISCOE, W. P., 1911, IV, City Engineering Dept., Houston.
BROGDON, S. T., 1908, III, Minister, Van. U., Nashville, Tenn.
BROWN, B. Mc., 1911, III, Draftsman, S. P. Shops, San Antonio.
BROWN, C., 1911, V, S. W. Tel. & Tel. Co., Dallas.
BROWN, C. G., 1906, V, Bell Tel. Co., Pittsburg, Pa.
BROWN, H. P., 1911, I, Farmer, Mathis.
BROWN, J. J., 1912, I, Instructor Agriculture, Moore.
BROWN, R. M., 1901, IV, in charge of track, Guayquil & Quito Ry., Box 37, Guayquil, Ecuador, S. A.
BROWN, T. H., 1879, Claim Agent, T. & N. O. Ry., Houston.
BROWN, W. H., 1880, IV, Planter, Navasota.
BRUCE, E. L., 1894, IV, Lawyer, Orange.
BRUNDRETT, G. T., 1908, V, with Stone & Webster, Dallas.
BRYAN, B. F., 1897, I.
BRYAN, W. I., 1900, II, Chief Engineer, Flour Mills, Celina.
BRYANT, W. T., 1911, VIII, P. G. Student, College.
BUCHANAN, T. S., 1909, IV, Resident Engineer, F. F. C. C. N. of Mex., Ajono, Kilo, 110 Michoacan, Mex.
BUCKMAN, C. D., 1889, IV, Denison Grocery Co., Denison.
BUCKNER, J. F., 1912, IV, Rodman, Santa Fe, Cleburne.
BUFORD, F. L., 1892, IV, Assistant Engineer, G., C. & S. F. Ry., Silsbee.
BUHLER, C. M.,1897, III, Chief Clerk, Disbursements, S. P. Co., 7532 Hampson St., New Orleans, La.
BUHLER, C. W., 1892, IV, Chief of Car Department, S. A. & A. P. Ry., San Antonio.
BUHLER, W. A., 1900, III, Grocer, Victoria.
BULLARD, T. O., 1899, III, I. & G. N. Shops, Mart.
BURCK, L. B., 1889, IV, Broker, 631 S. Spring St., Los Angeles, Cal.
BURFORD, J. M., 1882, III, Physician and Surgeon, Independence.
BURCHARD, C. L., 1886, III, Cashier, Bank of Goliad.
BURGOON, C. E., 1895, III, M. E., 1899, Eng. Federal Bldg., Chicago, Ill.
BURLESON, R. C., 1912, IV, Fort Myer, Va.
BURLESON, R. W., 1895, III, Cashier, W. M. & Co., Bank, San Saba.
BURMEISTER, C. A., 1908, I, Teacher of Agriculture, Brownwood.
BURNEY, J. W., 1896, III, Lumberman, Kerrville.

BURNEY, R. L., 1906, IV, Chief Eng., Mex. Coal and Coke Co., Los Esperanzos, Coahuila, Mexico.
BURNS, A. C., 1907, I, Veterinary Surgeon, Cleburne.
BURNS, H. E., 1906, IV, Draftsman, Colorado Southern R. R., Beaumont.
BURNS, J. C., 1904, I, Acting Professor of Animal Husbandry, College Station.
BURRITT, W. P., 1906, III, Asst. City Eng., San Antonio.
BURT, F. O., 1910, IV, City Engineer's Office, Waco.
BUTLER, J. V., 1912, IV, Medina Valley Irrigation Co., La Costa.
BYARS, G. E., 1910, IV, with City Engineer, Waco.
CABANISS, W. M., 1912, V, Garland.
*CALDWELL, J. C., 1883, III.
CALDWELL, J. R., 1912, III, Architecture, San Marcos.
CALLAWAY, W. H., 1912, IV, City Engineering Department, Corpus Christi.
CAMPBELL, D., 1879, Stockman, El Paso.
CAMPBELL, R. W., 1899, III, President and Bookkeeper, Campbell-Hutcheson Hardware Co., Roff, Okla.
CARLIN, W. J., 1910, III, Draftsman, City Engineer's Office, Houston.
CARLISLE, E., 1906, I, 38 W. 35th St., New York.
CARPENTER, M. M., 1902, I, Mining Engineer, 66 Scott St., Tucson, Arizona.
CARRINGTON, H., 1912, IV, Civil Engineer, Bay City.
CARROL, J. G., 1911, V, Westinghouse E. and M. Co., 413 Pitt St., Wilkinsburg, Pa.
CARSON, A. B., 1897, IV, Civil Engineer, Bryan.
CARSON, J. M., JR., 1886, I, Treasurer A. and M. College, College Station.
CARSON, J. W., 1886, I, Director of the Harris County Demonstration Farms, Houston.
CARSON, R. C., 1899, III, Machinist, 1305 N. Robinson St., Cleburne.
CARTER, J. D., 1900, IV, Civil Engineer, 905 Main St., Dallas.
CARTER, J. W., Civil Engineer, El Paso.
CARTER, T. H., 1912, V, Celeste.
CARTER, W. T., JR., 1898, I, Scientist in Bureau of Soils, Washington, D. C.
CARUTHERS, F., 1885, I, Cashier United States Land Office, Oklahoma City, Okla.
CARUTHERS, R. B., 1912, IV, City Engineer Department, Waco.
CASEY, P. D., 1908, VI, Secretary Police Department, Dallas.
CAVEN, G. P., 1897, I, Clerk, M., K. & T. Ry., 200 San Jacinto St., Dallas.
CAVITT, J. S., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
CAVITT, W. H., 1897, III, Oil Well Contractor, Box 101, Batson.
CELY, H. M., 1910, V, Teacher, Frankston.
CHAMBERS, M. L., 1879, Real Estate and Loans, 501½ Main St., Fort Worth.
CHANEY, L. P., 1912, V, Houston Electric Co., Houston.
CHRISTEN, J. C., 1912, V, 500 Kelly St., Wilkinsburg, Pa.
CHRISTIAN, B. H., 1910, IV, Houston.
CHRISTIAN, J. R., 1911, IV, Houston.
CHURCH, MARION S., 1905, I, Assistant County Attorney, Dallas County, Dallas.
CHURCH, W. G., 1912, V, General Electric Co., Schenectady, N. Y.
CLARK, H., 1895, I, Physician, Crowell.
CLAYTON, W. D., I, M. S., 1897, Farmer, Wakefield, La.
CLEMENT, T. H., JR., 1900, IV, Engineer, L. H. & G. Ry. Co., Hemphill.
CLONTS, T. P., 1904, IV, City Engineer, Muskogee, Okla.
COBBS, S. A., 1896, IV, Civil Engineer, Muskogee, Okla.
COBBS, T. D., JR., 1904, IV, Attorney at Law, San Antonio.
COCHRAN, E. G., 1879, Physician and Surgeon, Pearsall.
COCHRAN, J., 1904, IV, C. E., 1905, Trussed Concrete Steel Co., Detroit, Mich.
COCK, C. E., 1911, IV, Highway Engineer, Gonzales County, Gonzales.
COGHILL, E. S., 1911, IV, Medina Irrigation Co., Ingram.
COHN, S. L., 1897, IV, Advertising Manager, Sherman Oil and Cotton Co., Sherman.
COLE, A. T., 1909, V, Engineering Department, T. & N. O. Ry., Y. M. C. A. Bldg., Houston.
COLEMAN, M. M., 1910, I, Ranchman, Lubbock.
COLEMAN, N. P., 1911, III, Lineman, Bryan Tel. Co., Bryan.
COLLINS, J. A., 1907, V, Louisiana Creosoting Co., Winfield, La.
COLLINS, A. B., 1912, V, Denver Gas and Electric Co., Denver, Col.
CONNER, A. B., 1904, I, Agronomist for Texas Experiment Station, College Station.
CONNER, T. P., 1912, I, Red Oak.
COOK, E. A., 1892, III, Cleburne.
CORLETT, R. H., 1911, IV, Civil Engineer for the Texas Co., Wichita Falls.
CORNELL, A. L., 1908, IV, Auditor, M. K. & T. Ry. Co., Denison.
COTTINGHAM, I. A., 1886, III, Assistant General Manager, H. & T. C. Ry., 2811 Fannin St., Houston.
COTTINGHAM, W. P., 1892, IV, Manager Texas Blue Print and Supply Co., Houston.
*COTTON, H., 1897, IV.
COUCH, E., 1897, III, Engineer, City Engineer's Office, Dallas.
COULTER, H. T., 1895, II, Physician, Rockdale.
COULTER, W. J., 1895, III, Merchant, Bryan.
COULTER, R. E., 1901, III, Foreman Fuel Department, T. & P. Ry. Co., Texarkana.
COUSINS, R. W., 1899, III, Electrical Eng. Ind. Steel Co., Gary, Ind.
COX, D. W. S., 1892, IV, Manager Freight Department., Dallas Transfer Co., Dallas.
COX, H. T., 1912, V, Hereford.
COZART, R. B., 1911, III, Assistant Superintendent, Lufkin Foundry and Iron Works, Lufkin.
CRAVENS, J. R., 1882, III, General Agent, Fire Insurance, Houston.
CROCKETT, C. M., 1910, IV, C. E., U. S. Eng. Corps, Crockett.
CROCKETT, J. B., 1908, IV, C. E., 1909, Assistant Professor of Civil Engineering, College Station.
CROUCH, J. H., 1910, V, Salesman, Alvin.
CROW, W. E., 1898, II, Physician, Dallas.
CRUM, J. B., 1911, VII, Bookkeeper, American Exchange National Bank, Dallas.
CRUSE, JOHN T., 1905, I, Farmer and Teacher, Eagle Lake.
CULVER, DAN, 1908, III, Salesman, Lampasas.
CUNNINGHAM, F. H., 1910, V, Service Agent, Otis Elevator Co., Houston.
CUNNINGHAM, A., 1879, Railway Postal Clerk, Palacios.

CUNNINGHAM, P. E., 1907, IV, Junior Engineer, Mississippi River Commission, Box 404, Vicksburg, Miss.
CURTIN, W. H., 1912, III, Houston.
CUSHING, D., 1891, III, Pharmacist, Starkville, Miss.
CUSHING, E. B., 1880, III, C. E., 1899, Chief Engineer, Construction Sunset-Central Lines, President Board Directors, A. and M. College, Houston.
DAHME, A. F., 1904, IV, Engineer, Yorktown.
DALE, I., 1908, IV, Instrumentman, Clarksdale, Miss.
DALE, J., 1908, III, 330 E. 6th St., Oklahoma City, Okla.
DALLMEYER, C. D., 1911, VI, with Swift Mfg. Co., Columbus, Ga.
DARST, T. B., 1911, I, Farming and Stock Raising, Richmond.
DAVIS, D. O., 1911, I, McKinney.
DASHIELL, W. R., 1891, IV, Physician, Surgeon for the Victor Fuel Co., Gray Creek, Col.
DAVENPORT, H. S., II, Agriculturist, 2 Crawford St., Palestine.
DAVIS, J. M., 1903, IV, Banker, Forney.
DAVIS, J. N., 1885, III, Farming and Stock Raising, Hico.
DAWSON, N. A., 1884, III, Lawyer, Austin.
DAY, T. R., 1902, I, Real Estate, El Paso.
DAZEY, W. L., 1894, IV, Dentist, Hillsboro.
DEAN, J. S., 1906, VII, Architect, State Architect's Office, Sacremento, Cal.
DELLIS, J. L., 1912, IV, Draftsman, Pacific Electric Ry. Co., Los Angeles, Cal.
DEVINE, P. S., 1912, IV, Laredo.
DIBRELL, Z. H., 1910, V, Salesman, Meca Hotel, Houston.
DICKERSON, A. F., 1910, V, Gen. Elec. Co., Schenectady, N. Y.
DICKERSON, W. E., 1911, IV, County Surveyor, Cuero.
DICKSON, J. L., 1912, IV, Velasco.
DICKSON, R. E., 1912, I, Principal Cooper High School, Cooper.
DIETERT, R. H., 1888, III, Car Foreman, H. & T. C. Ry., 1214 Prairie St., Houston.
DINTER, H. A., 1911, V, Hico Electric Light and Power Co., Hico.
DODSON, C. P., 1911, V, Manager Light Plant, Nocona.
DONALDSON, C. B., 1893, III, Farmer, Kyle.
DORSEY, W. L., 1911, V, Assistant Commandant, Peacock's Military College, San Antonio.
DOWNS, J. R., 1879, Lawyer, Waco.
DOWNS, P. L., Cashier First National Bank, Temple.
DRISDALE, W. E., 1889, II, Physician and Surgeon for Victor-Amer. Fuel Co., Gray Creek, Col.
DROSS, P. H., 1902, III, General Manager F. Marty Foundry Co., Meridian, Miss.
DUDLEY, F. E., 1885, II, Real Estate, Hollywood, Cal.
*DUGAN, G. H., 1881.
DUGGAN, A. P., 1895, IV, Manager Littlefield Lands, Littlefield.
DUNN, R. B., 1904, III, Merchant, Benchley.
DURST, BRUNO L., 1905, IV, Civil Engineer, Dallas.
DWYER, T. J., 1912, IV, International Boundary Com., El Paso.
DWYER, W. F., 1899, I, Car Clerk, A., T. & S. F. Ry., Deming, N. M.
EDDINS, R. R., 1909, V, Electrician, Marlin.
EDSALL, A. B., 1907, I, Farmer, Spring Creek.
EDWARDS, J. F., 1883, III.
EBERSPACHER, F., 1906, IV, Retail Stationer, 221 N. 20 St., Birmingham, Ala.
EBERSPACHER, G., 1896, III, Machinist, S. P. Ry., Houston.
EBERSPACHER, R., 1901, III, Automobile Dealer, Corpus Christi.
EHLERS, P., 1907, V, Automatic Electric Co., Dallas.
EHLERS, V. M., 1905, Sanitary Engineering, LaGrange.
EHLERS, W. J., 1910, VII, Architect, Bishop.
EHLINGER, G. E., 1912, I, LaGrange.
EHLINGER, L., 1906, IV, Draftsman, General Land Office, Austin.
EHRHARDT, J. E., 1910, IV.
*ELDRIDGE, H. M., 1897, IV.
ELLIOTT, J. E., 1910, VII, Architectural Draftsman with W. H. Young, Architect, Houston.
ELLIOTT, F. G., 1906, VI, with Bush & Witherspoon, Cotton Brokers, Waco.
ELLIS, H. E., 1910, V, Western Electric Co., Oklahoma City, Okla.
ELLIS, B. V., 1892, I, Physician, 1131 Yale St., Houston.
ELLIS, FORT O., 1894, IV, Merchant, Harrisonburg, La.
ELLIS, O. L., 1908, V, Telephone Co., Clovis, N. M.
ELROD, H. E., 1901, III, Consulting Engineer, S. W. Life Bldg., Dallas.
ENGLISH, M. G., 1909, IV, with Stone & Webster, Houston.
EPPLER, H. G., 1912, V, Cisco.
EPPRIGHT, F. G., 1902, III, Machinist, I. & G. N. Shops, San Antonio.
EPSTEIN, S. G., 1907, IV, Resident Engineer, Interurban, Dallas.
ERHARD, E. C., 1903, III, Machinist, I. & G. N. R. R. Co., Palestine.
EUDALY, E. R., 1910, I, Manager Brookdale Farms, Jewett.
EVANS, C. D., 1899, IV, Civil Engineer, Shreveport, La.
EVANS, C. M., 1908, I, Superintendent Agricultural Extension Dept., College Station.
EVERSBERG, O. L., 1910, I, with Armour & Co., Brenham.
FAIRBAIRN, G. C., 1912, V, Port Arthur Lt. and Pr. Co., Port Arthur.
FARMER, A. G., 1895, III, Stockman, Junction.
FARMER, J. S., 1912, I, Mission Irrigated Farm Co., San Antonio.
FAUST, H., 1900, III, First National Bank, New Braunfels.
FAUST, W., 1897, IV, Cashier of First National Bank, New Braunfels.
FEARHAKE, J. D., 1889, IV, Attorney, 5 Nassau St., New York City.
FEHRENKAMP, E. B., 1901, IV, Bookkeeper, Kenedy.
FERGUSON, A. M., 1894, II, M. S., 1896, Seed Breeding, Sherman.
FIELD, H. Y., 1891, I, Stock Breeder, Argyle Avenue, Dallas.
FIGH, J. R., 1912, I, S. W. Tel. and Tel. Co., Dallas.
FINNEY, C. B., 1896, IV, Mining Engineer, Apartado 173, Oax., Mexico.
FITZGERALD, A. H., 1895, I, Druggist, Gonzales.
FITZGERALD, L., 1900, III, Superintendent G. H. L. & W. Co., Gary, Ind.
FITZHUGH, E. E., 1880, Real Estate, Waco.

FLEMING, C. H., 1908, VI, Bookkeeper, Cisco.
FLOYD, J. F., 1892, III, Lumber Dealer, Texarkana.
FLYNT, H. C., 1890, I, Real Estate, 810 Gunter Bldg., San Antonio.
FORD, F. D., 1911, IV, Cordell, Okla.
FORDTRAN, F. L., 1887, I, Physician, Kerrville.
FORSGARD, C. H., 1911, V, Engineer, Dallas.
FORSGARD, OSCAR L., 1905, IV, Resident Engineer, H. & T. C. Ry., Home Address, 1204 Holman Ave., Houston.
FORSYTH, J. M., 1912, III, McKinney.
FORT, F. W., 1879, Wholesale Grain, Provident Building, Waco.
FOUNTAIN, S. J., 1901, IV, Professor of Architecture, College Station.
FOUNTAIN, T. D., 1904, IV, Merchant, Dalhart.
FOUNTAIN, T. L., 1901, IV, Civil Engineer, Dallas.
FOUTREL, G. F., 1898, III, Machinist, 225 S. Pressa St., San Antonio.
FOWLER, E. G. R., 1894, IV, Lawyer, Palestine.
FOY, H. F., Jr., 1908, V, Engineer, Bell Tel. Co., St. Louis, Mo.
FOY, V. H., 1902, III, S. W. Tel. and Tel. Co., Pine Bluff, Ark.
FRANCIS, A. J., 1912, I, College Station.
FRAZIER, B., 1911, I, Manager Clifton Stock Farm, Waco.
FREEMAN, J. H., 1887, III, Insurance Agent, Austin.
FRIES, JOHN, 1912, IV, Levelman, S. A., N. & G. Ry., San Antonio.
*FULLER, T. A., 1879.
FURNEAUX, W. H., 1909, I, American Exchange National Bank, Dallas.
GARBADE, W. T., 1901, Adjunct Professor, University of Texas, Medical Department, Galveston.
GARNETT, R. M., 1902, IV, Section Foreman, S. P. Ry., Bay City.
GARZA, C. M., 1905, IV, Brownsville.
GEREN, P. M., 1912, VII, Draftsman, M. K. & T. Ry., Dallas.
GIESECKE, A. C., 1909, IV, Draftsman, Utah L. & P. Co., Salt Lake City, Utah.
GIESECKE, B. E., 1911, VII, Post Graduate Student, College Station.
GIESECKE, F. E., 1886, III, M. E., 1890, Professor of Architecture, University of Texas, Austin.
GIESECKE, G., 1884, III, Merchant Miller, 228 Washington St., San Antonio.
GIESECKE, W. E., 1892, III, Civil Engineer and Contractor, Gomez Palacios, P. O. Box 82, Durango, Mexico.
GILBERT, C. L., 1911, V, U. S. Army, Fort Adams, R. I., Home Address, Smithville.
GILBERT, J., 1894, I, Physician, Austin.
GILBERT, W. A., 1907, I, Farmer, Mabank.
GILBERT, W. R., Farmer, Austin.
GILLESPIE, S. E., 1903, III, Draftsman, The Murray Co., Dallas.
GILMORE, H. C., 1896, III, Electrician, Barden Electric Co., Houston.
GIST, BYRON, 1910, I, Memphis.
GLASS, R. H., 1904, III, Dentist, Alvin.
GLASS, WILL V., 1905, I, Teacher, Franklin.
GLEASON, B., 1906, V, Postmaster, Hico.
GLEASON, H., 1903, IV, Manager Hico Light and Power Co., Hico.
GLOVER, W. F. H., 1898, I, Planter, James Island, S. C.
GOLDBERG, I. L., 1896, II, Merchant, Jefferson.
GOODWIN, W. M., 1912, V, Western Elec. Co., Cicero, Ill.
GRADY, M. L., 1909, IV, Civil Engineer for Kirby Lumber Co., Houston.
GRAY, O. H., 1911, V, San Antonio Steam Laundry, San Antonio.
GRANAU, H. F., 1907, IV, Merchant, Bellville.
*GRAVES, C. S., 1882, III.
GRAVES, D. R., 1903, III, Signal Maintainer, T. & P. Ry., FortWorth
GRAY, J. L., 1884, III, Civil Engineer.
GREEN, C. E., 1912, V, General Elec. Co., Schenectady, N. Y.
*GREEN, R. B., 1884, III.
*GREENWOOD, F. J., 1898, IV.
GRIESENBECK, C. H., 1912, VII, Architect, 1101 S. W. Life Bldg., Dallas.
GRIFFITHS, T. W., JR., 1900, III, with Griffiths & Co., Lumber Dealers, Dallas.
GROTE, F. H., 1911, I, Taft.
GRUENE, E., 1887, III, Piano Dealer, New Braunfels.
GRUPE, G., 1892, III, Superintendent, L. & P. Plant, Cleburne.
*GUGENHEIM, L. Z., JR., 1906, V, E. E., 1907.
GURLEY, D. R., JR., 1892, Farmer, Waco.
HACKNEY, J. G., 1906, III, Merchant, Stamford.
HAILE, C. R., 1912, IV, San Antonio.
HADEN, J. H., 1879, Farmer and Stockman, R. F. D. No. 2, Barry.
HALTOM, G. T., 1906, V, Signal Supervisor, S. P. Ry., Flatonia.
HANER, E., 1904, IV, Division Engineer, Natl. R. R. of Mexico, Gomez Palacios, Mexico.
HANNA, HOWARD E., 1905, I, Traveling Salesman, Hughes-Percell Paint Co., Kansas City, Mo.
HANSCHKE, R., JR., 1890, III, Manager Advertising Department Freie Presse fuer Texas Publishing Co., 225 King William St., San Antonio.
*HARE, H. C., 1887, III.
HARE, S. C., 1882, III, Lawyer, 566 S. Travis St., Sherman.
HARRINGTON, C. B., 1902, I, Physician, Lake Charles, La.
HARRISON, C. C., 1899, II.
HARRISON, J. G., 1902, III, Architect, Wilson Bldg., Dallas.
*HARRISON, W. A., 1898, II.
HARRIS, D. B., 1909, IV, Bank Clerk, S. Texas Com. Natl. Bank, Houston.
HAUCK, CHARLES F., 1905, III, Captain Dredge Boat, Galveston.
HAWKINS, J. W., 1893, I, General Land Office, Austin.
HEIDELBERG, H. A., 1903, III, Iola Portland Cement Co., Dallas.
HELDENFELS, C. A., 1903, I, Lumber Dealer and Architect, Beeville.
HELDENFELS, F. W., 1909, VII, Lumber Dealer, Beeville.
HELLER, W. L., 1908, I, Wholesale Florist, R. F. D. No. 1, Alvin.

HEMPHILL, G. H., 1912, V, Otis Elec. Co., Houston.
HENDERSON, C. M., 1911, I, Farmer, Wills Point.
HENDERSON, H. W., 1891, I, Cotton Buyer, Ladonia.
HENSEL, F., JR., 1907, I, Instructor of Horticulture, College Station.
HEREFORD, J. B., 1887, III, General Agent, Fire Insurance, Dallas.
HERNSTADT, S. J., 1890, IV, Member New York Cotton Exchange, 60 Broadway, N. Y.
HIGGINS, W. S., 1907, IV, Roadmaster, G. H. & S. A. Ry., Victoria.
HILDEBRANDT, A. M., 1896, II, M. S., 1898, Minister, Sewanee, Tenn.
HILL, JOHN E., JR., 1904, III, 1905, V, E. E., 1907, Bell Tel. Co., Waco.
HILL, M. J., 1907, V, District Traffic Manager, S. W. Tel. and Tel. Co., Marshall.
HOEFLE, K. F., 1912, IV, Amalgamator, Usan, Chosen, Japan.
HOFFER, T. B., 1904, IV, Resident Engineer, Texas Company, Wichita Falls.
HOFFMAN, F. C., 1888, III, Jeweler, New Braunfels.
HOFMAN, R. W., 1906, IV, Merchant, Mason.
HOHN, CAESAR, 1912, I, Instructor in Agriculture and Athletic Director, Albertville, Ala.
HOLCOMB, R. M., 1902, Clerk, Auditor's Office, P. E. Ry, Lines, Los Angeles, Cal.
HOLLOWAY, T. E., 1908, I, U. S. Department of Agriculture, New Orleans, La.
HOLMAN, J. R., 1895, IV, Chief Engineer, Oregon & Washington R. R., Seattle, Wash.
HOLZMAN, F. R., 1902, I, Real Estate, Dallas.
HOLZMAN, WALTER R., 1905, I, Veterinary Inspector, B. A., I, 1421 Lake Ave., Fort Worth.
HOMANN, A. C., 1898, III, Cashier, First State Bank, Rowena.
HOMEYER, C. W., JR., 1908, IV, Engineer, Medina Irrigation Co., Lytle.
HOOKER, R. M., 1910, I, Farming, Tyler.
HOOPER, J. J., 1901, I, Professor of Animal Husbandry, Kentucky State College, Lexington, Ky.
HOPKINS, S. H., 1890, I, Attorney, Gonzales.
HORN, T. L., 1899, III, Machinist, I. & G. N. Shops, Palestine.
HORTON, C. K., 1909, IV, Civil Engineer for Horton & Horton, Houston.
HOUGH, S. A., 1885, III, County and District Clerk, Rock Springs.
HOUSTON, F. N., 1894, IV, Track Foreman, Jennings, La.
HOWELL, J. W., 1894, I, President and Manager, Bryan Cotton Oil Mill Co., Bryan.
HOWELL, R. W., 1896, I, Cashier, First National Bank, Bryan.
HOYO, G. A., 1906, I, Government Superintendent and Agriculturist, Calumet, Okla.
HUDGINS, F. D., 1897, IV, General Superintendent, Jas. C. Travilla Co., Fort Worth.
HULL, B. E., 1904, IV, Chief Engineer, Texas Co., Box 1805, Houston.
HUNT, N. H., 1912, V, Elec. Cont., Palestine.
HUTCHINSON, E. W., 1889, IV, Secretary-Treasurer, Moore-Cortes Canal Co., Houston.
HUTCHINSON, O. D., 1893, I, Farmer and Stockman, Chickasha, Okla.
HUTCHINSON, W. F., 1897, IV, Bank Cashier, Winter Haven, Fla.
HUTH, T. G., 1912, III, Mechanical Engineer, San Antonio.
HUTSON, A. C., 1900, IV, Engineer, Natl. Bd. Fire Underwriters, New York City.
HUTSON, H. L., 1896, III, Chief Engineer, A. M. Lockett & Co., Ltd., 533 Barron St. New Orleans, La.
HUTSON, W. F., 1895, IV, Assistant Engineer, G., H. & S. A. Ry., El Paso.
HUTSON, M. B., 1909, V, Salesman, Electric Appliance Co., New Orleans, La.
HYNDS, H. G., 1910, V, Texas Traction Co., McKinney.
INGRAM, H. L., 1910, V, Tex. Traction Co., Dallas.
ISBELL, J. M., 1903, IV, Civil Engineering Department, M., K. & T. Ry., Oklahoma City, Okla.
ITZ, F., 1911, IV, Medina Irrigation Co., San Antonio.
*JACK, D. M., 1879.
JACOT, H., 1902, Merchant, Mining Machinery, Apartado 414, Mexico City.
JAHN, R. S., 1910, IV, Draftsman, Sunset-Central Lines, Houston.
JAHN, F. C., 1894, II, Horticulturist, Gonzales.
JAPHET, G., 1894, III, Wholesale Fruit and Produce, 917 Commerce St., Houston.
JAPHET, W. E., 1904, IV, Civil Engineer, J. M. Guffey Co., Wichita Falls.
JENNINGS, J. W., 1911, I, Teacher of Agriculture, Jasper High School, Jasper.
JENSON, W. M., 1912, I, Coolidge.
JOBSON, H. H., 1908, I, U. S. Department of Agriculture, College Station.
JOBSON, T. S., 1903, III, Signal Supervisor, G., H. & S. A. Ry., El Paso.
JOHN, J. R., 1910, IV, Draftsman, Sunset Lines, Houston.
JOHNSON, M. L., 1912, V, Denver Gas and Electric Co., Denver, Col.
JOHNSON, T. L., 1912, I, Manager, Wadsworth Farm, Wadsworth.
JOHNSTON, T. J., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
JONAS, E. C., 1894, IV, Draftsman, Resident Engineer's Office, G., H. & S. A. Ry., 1002 Avenue D, San Antonio.
JONAS, H. F., 1888, IV, Bridge Engineer, Sunset Lines, Houston.
JONES, C. E., 1908, I, Bookkeeper, First National Bank, Bryan.
JONES, G. M., 1912, I, Medical Student, Galveston.
JONES, L. R., 1908, IV, Engineer, Gulf Refining Co., Port Arthur.
*JONES, W. F., 1889, IV.
JORDAN, H. P., 1895, IV, Attorney at Law, Waco.
JOSEY, N. L., 1888, I, Merchant, San Antonio.
JOUINE, G. P. F., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
KAHN, M. S., 1900, II, Physician and Surgeon, Hallettsville.
KELL, E., 1894, III, Mechanical Engineer, 2221 Columbus St., New Orleans, La.
KELLY, H. J., 1911, IV, Orange.
KENDRICK, R. T., 1906, I, Ranchman, Demmit.
KENEDY, O., 1883, III, Attorney at Law, Georgetown.
KENNEDY, E. J., 1912, I, Student, University of Texas, Austin.
KERR, E. W., 1896, III, M. E., 1899, Professor of Mechanical Engineering, Louisiana State University, Baton Rouge, La.
KERR, J. G., 1898, I, Veterinarian, 135 Cypress St., Beaumont.
KIDD, J. W., E. E., 1909, Electrician, Reclamation Service, Elephant Bute, N. M.
KINCAID, E. B., 1911, I, San Antonio.
KINSLOE, R. H., 1903, Magnolia Pet. Co., Corsicana.
KIRKPATRICK, L. R., 1906, III, McKinney.

KIRSCHNER, I., 1901, IV, Resident Engineer, W. F. & N. W. Ry., Leedey, Okla.
KLEINSMITH, M. L., 1901, IV, Resident Engineer, Maricopa, Cal.
KLEUSER, M. C., 1901, VII, Architect, Cuero.
KLOSS, E. L., 1902, III, Machinist, I. & G. N. Shops, San Antonio.
KLOSS, O. H., 1907, IV, Assistant Cashier, First National Bank, Bellville.
KNOLLE, A. P., 1888, IV, Physician, Ellinger.
KNOLLE, B. E., 1894, III, Physician, Industry.
KNOLLE, E. R., 1887, III, Physician, Brenham.
KNOLLE, O. J., 1897, I, Physician, Industry.
KNOLLE, W. H., 1888, IV, Physician and Surgeon, 3941 Canal St., New Orleans, La.
KOONS, J. V., 1911, III, Civil Engineer, El Campo.
KOPKE, L. J., 1880, IV, Civil Engineer and Rice Planter, 1068 Liberty Ave., Beaumont.
KOWALSKI, B., 1906, IV, with Fred A. Jones Bldg. Co., Dallas.
KREUGER, C. C., 1912, IV, Salesman, S. A., M. and S. Co., San Antonio.
KRAUSKOPH, E. M., 1911, IV, U. S. Engineer, Miss. River Com., Vicksburg, Miss.
KROULIK, HUGO J., 1905, Bookkeeper, Taylor.
KUEHNE, J. F., 1889, II, Manufacturing and Commission Agent, Box 5104, Mexico City.
KYLE, A. J., 1897, I, Stockman, Pecos.
KYLE, E. J., 1899, II, Professor of Horticulture and Dean of School of Agriculture, College Station.
*KYLE, H. C., 1896, I.
KYLE, J. A., 1890, I, Physician and Surgeon, Member of Board Directors A. and M. College, Binz Bldg., Houston.
*KYLE, T. M., 1893, III.
LANDA, L. M., 1907, V, Automatic Elec. Co., Dallas.
*LANGDON, W. F., 1911, IV.
LANGSTON, J. A., 1912, I, Cleburne.
*LAUDERDALE, J. R., 1908, I.
LAUDERDALE, J. C., 1911, IV, Assistant Engineer, Bureau of Public Works, Manilla, P. I. Home Address, Somerville.
LAW, F. M., 1895, I, Cashier, First National Bank, Beaumont.
*LAWLEY, L. P., 1902, I.
LEAR, J. E., E. E., 1909, Associate Professor of Electrical Engineering, College Station.
LEARY, EDGAR M., 1905, IV, Civil Engineer, with Mex. & N. W. R. R., Home Address, Alvin.
LEE, D., 1911, IV, Student, Cornell University, Ithaca, N. Y.
LEE, H. F., 1909, V, Dallas Tel. Co., Dallas.
LEE, KNOX, 1908, V, Electrical Foreman, Beaumont.
LEGGETT, C. W., 1910, III, Chemist, Fidelity Cotton Oil Co., Houston.
LEGGETT, W. W., 1889, IV, Co. "C," 1st Bat. U. S. Engineers, Manila, P. I.
LEMPERT, L. H., 1907, V, General Electric Co., Lynn, Mass.
LENERT, L. G., 1906, IV, Resident Engineer, T. C. R. R., Rising Star.
LENZ, L., 1907, IV, Draftsman, R. of W. Department, S. P. R. R., Box 464, Houston.
LEROY, L. F., 1911, III, San Antonio.
LEWIS, F., 1894, IV, City Engineer, Tahlequah, Okla.
LEWIS, J., 1900, I, Veterinary Surgeon, Greenwood, Miss.
LEWIS, L. L., 1893, I, M. S., 1894, Professor of Zoology and Veterinary Science, Oklahoma A. and M. College, Stillwater, Okla.
LEWIS, M. G., 1899, III, Locomotive Inspector, Schenectady, N. Y.
LICHTE, F., 1906, VI, Merchant, Cleburne.
LILLARD, S. A., 1910, IV, Manager, Flour Mill, Decatur.
LILLARD, W. W., 1904, IV, U. S. Eng. Corps, Dallas.
LILLY, R. C., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
LINDEMAN, C. E., 1903, III, Machinist, G., C. & S. F. Ry., Cleburne.
LINDEMAN, JAMES E., 1905, III, Draftsman, Ft. W. & D. C. R. R., Childress.
LINDLEY, T. L. P., 1912, I, Wortham.
LINDNER, M., 1908, III, Box Manufacturer, San Antonio.
LIPSCOMB, R. S., 1882, III, Physician, Grapevine.
LITTLEJOHN, R. G., 1891, IV, City Assessor and Collector, City Hall, Fort Worth.
LOCHRIDGE, J. L., 1910, IV, Draftsman, Medina Irrigation Co., Lytle.
LOCKETT, N., 1903, IV, Engineering Department, Care Williamson, Balfour & Co., Taltal, Chile.
LOMANITZ, S., 1908, Chemist, Houston.
LOONEY, L. P., 1910, I, Farmer, R. F. D. No. 1, Commerce.
LOUWIEN, H., 1911, V, Denver Gas and Electric Co., Denver, Col.
LOVE, A. C., 1899, IV, Real Estate, Franklin.
LOVING, J. W., 1906, I, Ranchman, Jermyn.
LUCKETT, W. H., 1891, I, Physician and Surgeon, 112 W. 119th St., New York, N. Y.
*LUCKETT, W. M., 1894, III.
*LUHRSEN, C. W., 1900, IV.
McADAMS, E. E., 1911, IV, Instructor in Physics, College Station.
McANELLY, E. E., 1911, VII, Architect, 1101 S. W. Life Bldg., Dallas.
McCALL, H. S., 1903, IV, Resident Engineer, T. C. R. R., Waco.
McCONNELL, J. P., 1911, IV, M. K. & T. Ry., Oklahoma City, Okla.
McCONNICO, S. F., 1901, I, Fire Insurance Inspector, Praetorian Bldg., Dallas.
McCORMICK, GEO., JR., 1891, III, Assistant Superintendent, G., H. & S. A. Ry., El Paso.
McCOWN, J. W., 1910, I, Whitney.
McCULLOUGH, C. C., 1886, C. E., 1890, Surgeon, U. S. Army, Manila, P. I.
McCULLOUGH, R. E., 1912, IV, Houston.
McDANIEL, A. A., 1909, I, Medical Student, University of Texas, Galveston.
McDONALD, W. A., 1910, V, Houston.
McDONALD, H. F., 1895, III, Draftsman, General Land Office, Austin.
McDONALD, W. H., 1902, I, Farmer, Brownsville.
McDOWELL, C. H., 1912, I, Farmer, Corpus Christi.
McEACHERN, C. A., 1912, I, Merchant, Route 1, Austin.
McELROY, T. E., 1908, I, U. S. Department of Agriculture, Stillwater, Okla.
McFARLAND, ARTHUR, 1905, III, U. S. Engineering Corps, Galveston.

McFARLAND, J. L., 1912, V, Santa Anna.
McGINNIS, F. K., 1900, II, Horticulturist, Dallas.
McGINNIS, N. M., 1908, I, Instructor, College of Industrial Arts, Denton.
McCRAW, M., 1911, III, Merchant, Dallas.
McGREGOR, F., 1903, IV, Contractor, Houston.
McILHENNY, J. L., 1910, IV, San Antonio St. Ry. Co., San Antonio.
McKAY, C., 1910, V, 500 Kelly St., Wilkinsburg, Pa.
McKAY, G., 1910, V, Western Electric, Chicago, Ill.
McKAY, G., 1903, III, Longview, Iron Works, Longview.
McKNIGHT, O. J., 1903, IV, Assistant Cashier, Dalhart Bank, Dalhart.
McLAVY, R. B., 1903, III, Bastrop.
McLENNAN, LAMAR, 1905, I, State Feed Inspector, Oklahoma City, Okla.
McLEOD, J. H., 1908, I, Student, University of Wisconsin, Madison, Wis.
McMAHAN, L., 1911, V, Merchant, Waco.
McMILLAN, F. N., 1912, I, Calvert.
McMILLAN, L. B., 1911, III, Agriculturist, San Antonio.
McMILLAN, M., 1895, III, Physician and Surgeon, Health Department, New York City.
McMILLAN, S. A., 1909, I, San Antonio.
MacNAIR, H. J., 1887, III, 239 W. 39th St., New York City.
McNEIL, J. C., 1896, IV, Ranchman, Spur.
McQUEEN, T. B., 1884, III, Secretary, Marlin Oil Co., Marlin.
MABRY, R., 1889, IV, 806 Cherry St., Fort Worth.
MACKENSEN, B. C., 1884, III.
MACKENSEN, L., 1885, III, Farmer, Houston.
MAEDGEN, C. E., 1904, I, Banker, Temple.
MANGUM, R. L., 1912, V, Unsan, Korea.
MANSFIELD, B. J., 1912, VII, Instructor in Drawing, College Station.
MANSFIELD, R. H., 1903, IV, Eng. Dept. N. Y. C. & H. R. R., Room 3016, G. C. Station, New York City.
MARBACH, A., 1907, IV, Instrumentman for S. L. Clark, Cotulla.
MARBURGER, BERNARD, 1905, IV, Roadmaster, H. & T. C., Ennis.
MAREK, E. L., 1907, IV, Draftsman, Pleasanton.
MARKHAM, E. L., 1902, IV, Assistant Engineer, St. L. S. W. Ry., Pine Bluff, Ark.
MARKS, S. H., 1911, VI, Cashier, Guaranty State Bank, Pearsonville.
MARTIN, E. L., 1899, IV, Assistant Superintendent, M., L. & T. Ry., Lafayette, La.
MARTIN, H. B., 1895, III, Superintendent for Morey-Faulkhaber Construction Co., Caldwell.
MARTIN, C. H., 1911, I, Stock Farmer, Mason.
MARTIN, S. H., 1911, I, Rancher, Mason.
MARTIN, S. P., 1912, V, Bryan.
*MARTIN, W. C., 1898, II, M. S., 1901.
MASSENBERG, W. G., 1894, IV, Division Engineer, G., C. & S. F. Ry., Beaumont.
MATTHEWS, H. F., 1903, IV, Contractor, San Antonio.
MAXWELL, J. W., 1904, III, Manager, Copper Mines, Panulcillo, Cocuimbo, Chile.
MAXWELL, N. C., 1907, IV, Bookkeeper, Hamilton.
MAYER, M. F., 1906, VII, Architect, San Antonio.
MEAD, J., 1897, IV, Resident Engineer, St. L., B. & M. Ry., Bay City.
MEECE, B. L., 1912, V, D. C. Mining Co., Unsan, Korea.
MEEK, R. W., 1904, III, Foreman, T. & N. O. Signal Shops, Houston.
MENKE, C. H., 1910, Stockman, Hempstead.
*MERRETT, W. B., 1889, I.
MERRIWETHER, W. T., 1891, IV, Tampico, Mexico.
METCALFE, J. D., 1906, IV, Resident Engineer, H. & T. C. Ry., Caldwell.
METCALFE, T. P., 1911, I, Post Graduate, Student, University of Missouri, Columbia, Mo.
MIDDLEBROOK, E. S., 1889, IV, Manager for Lumber Manufacturing Plant, Nona.
MIDDLEBROOK, R. M., 1891, III, Sales Manager, Gibbs Bldg., San Antonio.
MIKESKA, H. J., 1910, IV, with Santa Fe, Davis, Okla.
MILEY, J. H., 1896, IV, Attorney at Law, 401 N. Beard St., Shawnee, Okla.
MILLER, C. S., 1880, Banker, Ballinger.
MILLER, E. A., 1908, I, Assistant State Horticulturist, Austin.
MILLER, H. J., 1883, Broker, Bellville.
MILLER, J. D., 1912, IV, Comanche.
MILLER, M. J., 1911, IV, with C. B. Roulet, Dallas.
MILLER, R. F., 1909, I, Assistant A. and M. College of Montana, Bozeman, Mont.
MILLICAN, WAYNE, 1907, I, Stock Farmer, Corsicana.
MINEAR, SYLVESTER, A., 1905, I, Agricultural Department, A. and M. College, Stillwater, Okla.
MINTER, C. J., 1909, I, Bank Clerk, Fort Worth.
MISTROT, G. A., JR., IV, Houston.
MITCHELL, A., 1894, IV, Professor of Drawing, College Station.
MITCHELL, W. H., 1894, IV, Druggist, Holland.
MITCHELL, A. F., 1909, IV, Civil Engineer, Eagle Lake.
MITTMAN, E. F., 1902, IV, Assistant Engineer, American Rio Grande Land and Irrigation Co., Mercedes.
MONROE, J. S., 1900, IV, Assistant Engineer, Mexican Central Ry., Mexico City.
MONTEMAYOR, R. R., 1911, I, C. Victoria, Tamaulipas, Mexico.
MONTGOMERY, F. L., 1889, I, Lawyer, Muskogee, Okla.
MOORE, C. B., 1911, I, Stock Farmer, Van Alstyne.
MOORE, F., 1902, I, Teacher, 410 W. Second St., Fort Worth.
MOORE, G. F., 1908, IV, 1st Lieutenant, U. S. Army, Fort Worden, Wash.
MOORE, G. G., 1903, IV, Farmer, DeKalb.
MOORE, R., 1892, I, Druggist, Tilden.
MOORE, T. E., 1892, I, Secretary and Auditor, Eureka Tel. Co., San Antonio.
MOORE, W. G., 1907, V, Sales Engineer, Arnold & Wetherby, Oklahoma City, Okla.
MOORE, W. M., 1895, IV, President and General Manager, L. G. & R. M. Mining Co., S. W. Life Bldg., Dallas.
MOORE, W. S., 1911, I, Stock Farmer, Yoakum.
MORLEY, M. D., 1912, III, Instructor in Mechanical Engineering, A. and M. College.

MORRILL, C. R., 1891, IV, Assistant Superintendent, G., H. & S. A. R. R., El Paso.
MORRIS, C. C., 1911, I, Farmer, R. F. D. No. 4, Henderson.
MORTON, O. L., 1911, III, Draftsman, Dallas.
MOSELEY, HAL, 1901, IV, Civil Engineer, P. O. Box 1682, Dallas.
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MOSER, C. OTTO, 1904, I, President North Texas Creamery Co., Dallas.
MOSER, E. F., 1912, I, Dallas.
MOURSUND, A. F., 1895, IV, Assistant Superintendent, G., V. G. & N. R. R., Globe.
MOURSUND, E. M., 1897, IV, Resident Engineer, H. & T. C. R. R., Ennis.
MOUSER, E. B., 1895, I, Physician, Electra.
MULLINS, E. Y., 1879, President Southern Baptist Theological Seminary, Norton Hall, Ky.
MUNSON, T. A., 1910, IV, Civil Engineer, Angleton.
MUNSON, A., 1908, V, Civil Engineer, Angleton.
MUNSON, H. W., 1909, V, Houston.
MYERS, A. L., 1907, V, McFell Electrical Co., San Francisco, Cal.
MYERS, O. W., 1900, III, Machinist, I. & G. N. Shops, 406 Austin St., Palestine.
MYERS, W. G., 1894, III, Mining, Parral, Mexico.
NAGLE, J. M., 1911, IV, Draftsman, Stone & Webster, Dallas.
NAVE, G. F., 1912, III, Clerk, S. A. & A. Ry., Kennedy.
NEALE, R. B., 1908, I, Stock Farmer, Archer City.
NEATHERY, D. E., 1892, I, Merchant, Farmersville.
NEFF, A. J., 1903, III, Post Graduate Student, College Station.
NEIGHBORS, A. H., 1911, VII, Medical Student, University of Texas, Galveston.
NESS, H., 1889, II, Horticulturist, Experiment Station, College Station.
NETHERWOOD, D. B., 1908, III, 2nd Lieutenant Coast Artillery, Fort Stevens, Ore.
NETHERWOOD, J. S., 1911, III, Houston.
NEWELL, G., 1910, V, Westinghouse E. and M. Co., Houston.
NEWTON, G., 1898, I, Merchant, Thorndale.
NEWTON, J. W., 1912, VIII, Instructor in Chemistry, A. and M. College.
NICHOLS, J. F., 1898, II, Attorney at Law, Greenville.
NICHOLS, J. R., 1889, I, Oculist, State Institutions, Austin.
NICHOLS, W. L., 1891, IV, Real Estate, Wilson Bldg., Dallas.
NORTH, W. G., 1908, I, Farmer, Yoakum.
O'BAR, J. H., 1893, I, Cotton Buyer, Coleman.
O'CONOR, T., 1910, V, 515 Soledad St., San Antonio.
OGLESBY, G. B., 1894, IV, Farming, Gordonville.
OLDS, T. H., 1902, IV, Sao Paulo Light and Power Co., Sao Paulo, Brazil.
OLIPHANT, J. W., 1903, IV, Civil Engineer, with S. Gibbs, Huntsville.
ORR, W. R., 1906, IV, Grocer, Llano.
ORTIZ, J. A., 1892, IV, Stockman, 915 Zaragossi St., Laerdo.
OVERSHINER, E. M., 1897, IV, Attorney at Law, Abilene.
PAPE, G. H., 1904, IV, Cotton Agent, Wilson Bldg., Dallas.
*PARK, C. M., 1896, IV.
PARKS, L. D., 1911, IV, Civil Engineer, Frisco R. R., 589 St. Louis Ave., Springfield, Mo.
PARSONS, B. C., 1893, II, Deputy Collector of Customs, Terlingua.
PATRICK, A. T., 1883, III.
PARTRIDGE, R. C., 1912, III, Farming, Munday.
PATTERSON, J. C., 1912, I, Clarendon.
PEARCE, R. B., 1911, IV, Instructor in Terracing, College Station.
PEARSON, H. A., 1893, IV, Farmer, Troy.
PEDEN, L. T., 1904, IV, Dewson & Fletcher, Houston.
PENDLETON, DAVID E., 1905, IV, Assistant Engineer, M., K. & T. Ry., Trinity.
PENNER, W. A., 1906, V, Corsicana Light Co., Corsicana.
PENNINGTON, R. E., 1884, I, Lawyer, Brenham.
*PERLITZ, W. E., 1893, IV.
PESCAY, C. H., 1885, III, Special Agent, 911 Hennen Bldg., New Orleans, La.
PETER, L. S., 1911, V, Westinghouse Electric Co., Wilkinsburg, Pa.
PETERS, R. F., 1894, III, Chief Draftsman, S. A. & A. P. Ry., San Antonio.
PFEUFFER, F. L., 1885, III, Real Estate Colonizing, Omaja, Cuba.
*PFEUFFER, W. O. R., 1888, I.
PFEUFFER, U. S., 1891, IV, Lumber Merchant, New Braunfels.
PHILPOTT, W. B., 1884, III, M. S., 1890, care D. M. Derden, Amarillo.
PICKETT, G., 1911, III, Medina Irrigation Co., Home Address, Karnes City.
PIRIE, J. E., 1904, with Street & Born, Contractors, Houston.
PIRIE, J. H., 1906, V, 1st Lieutenant Coast Artillery, U. S. Army, Fort Hamilton, New York.
PITTUCK, B. C., 1894, I, Division College Extension, A. and M. College, Stillwater, Okla.
POLANSKY, T., 1909, IV, Post Graduate Student, Columbia University, New York.
POLK, W. A., JR., 1895, IV, Wholesale Grocer, Corsicana.
POOL, H. M., 1911, IV, U. S. Engineer, Vicksburg, Miss.
POTTHAST, A. H., 1911, IV, Medical Student, University of Texas, Galveston.
POTTS, A. T., 1907, I, Assistant Professor of Horticulture, College Station.
POTTS, R. J., 1906, IV, C. E., 1907, Associate Professor of Highway Engineering, College Station.
*POULTER, R. J., 1899, II.
PRICE, W. A., 1905, I, Farmer, Reagan.
PROCTER, J. H., 1910, V, Westinghouse Elec. Co., Wilkinsburg, Pa.
PUCKETT, D. M., 1911, IV, Engineer, Los Andes, Chile, S. A.
PUCKETT, F. S., 1907, I, care N. C. Dept. of Agriculture, Raleigh, N. C.
PUCKETT, J. W., 1904, IV, Civil Engineer, Los Andes, Chile, S. A.
RADFORD, J. S., 1890, II, Manager Oriental Textile Mills, Houston.
RAGSDALE, J. W., 1890, I, Lawyer, Hallettsville.
RAMSAY, J. W., 1906, V, Instructor in Electrical Engineering, University of Texas, Austin.
RATCHFORD, W. P., 1892, III, County Surveyor, Del Rio.
RATHER, J. B., 1907, I, M. S., 1911, Assistant State Chemist, College Station.
RAWLINS, H. E., 1898, III, Superintendent, Quarries Supply Co., Campo Florida, Cuba.
RAY, S. H., 1911, I, Professor of Animal Husbandry, Jonesboro, Ark.
READING, R. S., 1910, V, Otis Elevator Co., Waco.

REESE, G. W., 1907, IV, Bosque-Wensley Lead Co., Denver, Colo.
*REICHARDT, F. A., 1879.
RENNERT, F., 1888, I, Commission Merchant, Rennert-Millette Co., San Antonio.
*RHODES, S. E., 1896, III.
RHOME, R. J., 1901, Attorney at Law, Fort Worth.
RICE, D., 1882, III, Public Weigher, 1107 Lamar St., Houston.
RICE, E. R., 1902, III, Mining Engineer, S.-W. Miami Copper Co., Miami, Ariz.
RIDENHOWER, R., 1903, IV, Hico.
RIDENOUR, C. A., 1909, IV, U. S. Engineer's Office, Dallas.
RIFE, A. J., 1909, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
RIKE, H. M., 1893, IV, Abstractor, Haskell.
RILEY, A. A., 1909, IV, Assistant Engineer, T. & N. O. R. R. Co., Y. M. C. A. Bldg., Houston.
RISIEN, G. W., 1903, IV, Draftsman, N. Y. C. & H. R. Ry., S. W. 129th St., New York City.
*ROACH, G. W., 1884, III.
ROBBINS, A. J., 1911, III, Silversmith, Bryan.
*ROBERTSON, D. K., 1902. III.
ROBERTSON, R. L., 1909, I, Ranchman, Valentine.
ROBINSON, E. R., 1908, I, Ranchman, Dalhart.
ROBINSON, G. W., 1911, V, Brush Elec. Co., Galveston.
ROBSON, C. G., 1898, II, President Southern Tel. Co., LaGrange.
RODRIGUEZ, D., 1896, IV, Civil Engineer and Planter, 114 Zaraona St., C. Porfirio Diaz, Mexico.
ROGAN, CHAS., 1879, Lawyer, Austin.
ROGERS, B. F., 1889, IV, Banker, Jefferson.
ROGERS, C. P., 1900, II, Attorney at Law, Austin.
*ROGERS, G. A., 1887, III.
ROGERS, R. A., 1878, Cotton Factor and Commission Merchant, Galveston.
ROLLINS, A. P., 1906, IV, Manager, Farm, Merit.
ROLLINS, C. W., 1893, IV, Civil Engineer, Neches Canal Co., China.
ROLLINS, H. M., 1897, III, Foreman Gulfport Creosoting Works, Gulfport, Miss.
ROMBERG, C. B., 1912, III, Erecting Engineer, Frick Co., Dallas.
ROSA, R. R., 1912, I, Extension Department, College Station.
ROSE, W. F., 1894, III, Sanitary Engineer, Box 490, San Antonio.
ROSEBOROUGH, W. D., 1909, IV, Civil Engineer, Dallas.
VON ROSENBERG, H. J., 1912, VII, Student, Massachusetts Institute Tech., Boston, Mass.
ROSENTHAL, H. H., 1896, IV, Secretary and Treasurer, J. J. Segal Co., Jefferson.
ROSS, F. R., 1894, I, Physician and Surgeon, Houston.
ROSS, J. G., 1894, IV, Attorney at Law, Cole Springs.
ROSS, J. L., 1902, IV.
ROSS, R., 1902, IV, Civil Engineer, Guatamala City.
ROUNTREE, T. D., 1898, IV, Physician, Lake Creek.
ROWELL, T. D., 1885, I, Attorney at Law, Jefferson.
RUBENKOENIG, H., 1904, III, Professor of Mechanical Drawing, State Manual Training Normal, Pittsburg, Kan.
RUDASILL, W. S., 1890, IV, Real Estate Dealer, Box 94, Sherman.
RUDLOFF, E. W., 1911, V, Otis Elevator Co., Houston.
RUDOLPH, R. F., 1911, IV, U. S. Engineer, Box 404, Vicksburg, Miss.
RUST, W. M., JR., III, Signal Department, Seguin.
SAMMONS, THOMAS B., 1905, I, Farmer, Mission.
SAMPSON, W. E., 1908, IV, Assistant City Engineer, Beaumont.
SAMUCH, L., 1902, IV, Merchant, Hallettsville.
SANDERS, P. L., 1903, IV, Controller, Galvez Hotel, Galveston.
SANDERS, W. O., 1896, II, Manager, Parker Lumber Co., Bryan.
SANFORD, C. E., 1911, IV, with Cory, Harrison & Co., San Antonio.
SAUVIGNET, E. H., 1892, I, Physician, Laredo.
SAWYER, R., 1882, III, Breeder of High Grade Hereford Cattle, Clarendon.
SCARBOROUGH, JOHN, 1912, IV, Corsicana.
SCHADT, C. A., 1907, V, Merchant, 27th St., and Ave. H, Galveston.
SCHAEFFER, R. E., 1908, III, Salesman, Schulenburg.
SCHAEDEL, C. T., 1912, IV, San Benito Drainage Co., San Benito.
SCHAWE, W. A., 1907, I, Hardware Merchant, Bowie.
SCHERER, C. L., 1896, IV, City Engineer, Beaumont.
SCHERER, W. A., 1898, II, Stockman, Anahuac.
SCHILLER, R. E., 1906, IV, C. E., 1908, U. S. Engineer, Dallas.
SCHLEY, C. C., 1910, V, Salesman, W. E. Co., Dallas.
SCHLOM, C. L., 1912, IV, Houston.
SCHMIDT, C. L., 1890, III, Pierce-Fordyce Oil Association, Laredo.
*SCHMIDT, D. T. C., 1894, IV.
SCHMIDT, H., 1908, I, Veterinarian, Experiment Station, College Station.
SCHOLL, E., 1907, I, State Entomologist, Department of Agriculture, Austin.
SCHROEDER, E. A., 1911, VII, Draftsman, College Station.
SCHROEDER, ERWIN F., 1905, I, House Surgeon, Boston Veterinary Hospital, 549 Albany St., Boston, Mass.
SCHROETER, H., 1907, IV, Inspector, A., T. & S. F. Ry., Kerckhoff Bldg., Los Angeles, Cal.
SCHROETER, A., 1909, IV, Draftsman, 2119 Ave. I, Galveston.
SCHUMACHER, H. C., 1892, IV, Wholesale Grocer, Houston.
SCHWAB, L. C., 1911, III, Cuero.
SEWARD, O., 1907, IV, Office Engineer, Gulf Pipe Line Co., Beaumont.
SEWELL, M. S., 1894, IV, Merchant, McGregor.
SHANKLIN, R. W., 1906, IV, Civil Engineer for Mexico & N. W. R. R., Nuevo Casas Grandes, Cia., Mexico.
SHEARER, D. M., 1909, IV, U. S. Engineer, Greenville, Miss.
SHEARER, T. R., 1912, I, Secretary, New Era Gravel and Drainage Co., Houston.
SHERRARD, R. G., 1910, V, 2nd Lieutenant, U. S. Army, Port Liscum, Alaska.
SHERRILL, O. W., 1910, I, Farmer, Kerens.
SHIELS, R. T., 1910, V, General Electric Co., Chicago, Ill.
*SHIRES, F. N., 1897, III.

SHIRES, G. M., 1897, III, City Boiler and Elevator Inspector, City Hall, Houston.
SHIRLEY, A. L., 1884, I, Farmer and Merchant, Anna.
*SHIRLEY, M. W., 1889, III.
SHIRLEY, W. M., 1889, IV, County Treasurer, Collin County, McKinney.
*SHIRLEY, Z. M., 1888, III.
SHORT, A. K., 1900, I, Superintendent of Experiment Station, Temple.
SHORT, J. L., 1893, I, Physician and Surgeon, 300-301 Kiam Bldg., Houston.
SHROMPSHIRE, L. O., 1912, V, Plainview.
*SIGEL, R. C., 1909, III.
SIMPSON, J. H., 1901, IV, Deck Officer, U. S. Bache Fijardo, Porto Rico.
SIMPSON, O. M., 1900, IV, Hardware, Callehan & Simpson, Jacksboro.
SIMPSON, S. H., 1909, IV, Cashier, Simpson Bank, Columbus.
SINGLETARY, J. N., 1910, I, Instructor in Science, Longview High School, Longview.
SKAGGS, G. E., 1908, V, Assistant Engineer, Bell Tel. Co., St. Louis, Mo.
SKEELER, F. J., 1910, V, Instructor in Physics, College Station.
SLEEPER, W. M., 1879, III, Lawyer, 714 N. 12th St., Waco.
*SLOSS, A. M., 1899, I.
SMITH, A. J., 1908, I, Farmer, Port Sullivan.
SMITH, A. U., 1895, III, Texas Blueprint Co., Dallas.
SMITH, E. J., 1888, I, Attorney at Law, Denison.
SMITH, E. W., 1910, IV, Denison.
SMITH, G. A., 1909, V, Bermuda.
SMITH, T. L., JR., 1898, IV, Civil Engineer and Surveyor, Eagle Lake.
SMITH, T. M., 1901, I, Bookkeeper, Columbia.
SMITHER, R., 1894, III, Merchant, Duke.
*SMYTHE, H. G., 1879.
SNEARLEY, C. L., 1911, V, Electrician, Automatic Elec. Co., Chicago, Ill.
SNEED, G. L., 1898, I, Minister, Station A, Dallas.
SOLES, C. B., 1899, III, Machinist, I. & G. N. Shops, Palestine.
SORY, E. G., 1912, IV, Draftsman, M. K. & T. Ry., Dallas.
SOUTHER, S. C., 1912, I, Farmer, Rosebud.
*SPANN, E. W., 1885, III.
SPEER, R. H., 1894, IV, Stockman, Quanah.
SPENCE, E. V., 1911, IV, Medina Irrigation Co., Rio Medina.
SPENCER, W. W., 1911, III, Clerk, Commonwealth National Bank, Dallas.
SPIVEY, M. C., 1908, IV, Civil Engineer, care City Engineer, Houston.
STALLCUP, J. F., 1904, IV, with H. & T. C., 1513 Wash. Ave., Houston.
STANDIFER, R. H., 1908, IV, City Engineering Department, Fort Worth.
STAPP, W. E., 1904, IV, Conroe.
STERNBERG, E. H., 1897, IV, County Superintendent of Public Instruction, Bellville.
STERNENBERG, PAUL, 1905, III, Superintendent Steel Works, 2228 Chapel St., Berkeley, Cal.
STERNS, J. B., 1903, Civil Engineer, Nona Mills Co., Leesville, La.
STEVENS, R. R., 1910, IV, Engineer, C., M. & S. P. Ry., Minneapolis, Minn., Home Address, Clarendon.
STEWARD, W. W., 1888, III, Civil Engineer for Freestone Co., Steward's Mill.
STEWART, J. E., 1912, IV, Civil Engineer, Corpus Christi.
STIMSON, O. E., 1910, IV, Houston.
STINSON, V. L., 1904, IV, Civil Engineer and County Surveyor, Durant, Okla.
STREET, GUS C., JR., 1905, I, Contractor, Houston.
STRIEBER, C. A., 1902, III, Machinist, I. & G. N. Shops, 215 Trinity St., Palestine.
STUBBS, VAN HOOK, 1905, I, Banker, Wortham.
SVASTA, S. F., 1910, V, Telephone Engineer, 400 E. 61st St., Chicago, Ill.
SWAIN, M. S., 1888, II, Houston.
TABER, R. G., 1910, IV, Dallas Electric Ry. Co., Dallas.
TABOR, J. R., 1906, VII, Architect, Houston.
TALBOT, A., 1882, III, Planter, Calvert.
TARVER, T. C., JR., 1904, IV, Houston.
TAYLOR, L. T., 1912, IV, San Augustine.
TAYLOR, M., 1911, V, Sulphur Springs.
TELFAIR, W. H., 1909, V, Ennis.
TEMPLETON, B. O., 1912, V, Western Elec. Co., Cicero, Ill.
TERRY, L. H., 1911, VIII, Chemist, Oklahoma Cotton Oil Co., Oklahoma City, Okla.
THALMANN, C. H., 1911, III, Ranch Manager, Bandera.
THANHEISER, C. A., 1901, IV, Engineer, M. of W., M., K. & T. Lines, Dallas.
THANHEISER, L. O., 1911, V, San Antonio Gas and Electric Co., San Antonio.
THARP, P., 1910, IV, Law Student, Stewart Bldg., Houston.
THAXTON, HAROLD, 1912, I, Mason.
THOMAS, J. B., 1911, III, Dallas Elec. Co., Dallas.
THOMAS, M. F., 1901, III, Instructor and Graduate Student, Cornell University, Ithaca, N. Y.
THOMPSON, C. B., 1907, III, Milling Engineer, 917 S. Alamedo St., Los Angeles, Cal.
THOMPSON, T. E., 1910, IV, Medina Irrigation Co., Lytle.
THROWER, J. D., 1900, I, U. S. Department of Agriculture, Kansas City, Mo.
TILSON, M. D., 1886, III, Manufacturer and Merchant, Texarkana.
TILSON, P. S., 1888, I, M. S., 1894, Director Houston Laboratories, 215½ Main St., Houston.
TILSON, W. H., 1903, IV, City Engineer, Plainview.
TODD, A. M., 1894, IV, U. S. Assistant Engineer, P. O. Box 404, Vicksburg, Miss.
TODD, CHAS. C., 1897, II, Attorney at Law, San Antonio.
TODD, D. H. B., 1911, V, Amarillo.
TRACY, H. H., IV, Hardware, Tulia.
TREADAWAY, S. J., 1907, IV, R. R. Cons. Works, El Granada, Cal.
TRENCKMANN, R., 1907, III, Fairbanks, Morse & Co., Beloit, Wis.
TRENCKMANN, W. A., 1878, Newspaper Publisher, Austin.
TRICKEY, W. W., 1911, IV, with C. B. Roulet, Civil Engineer, Dallas.
TRIGG, K. M., 1911, I, Stock Farmer, Bastrop.
*TULLER, W. L., 1883, III.
UECKERT, H. H., 1897, IV, Draftsman, M. of W. Department, Sunset Route, Houston

UNDERWOOD, A., 1907, IV, Civil Engineer, Dowys Land Co., B. EAfrica..
UNDERWOOD, HARRIS, 1912, IV, Houston.
VAN AMBURG, T. A., 1909, IV, with Cotton Belt Ry., Pine Bluffs, Ark.
VAN ZANDT, K. M., JR., 1879, Vice-President and Manager, Mercantile Banking Co., No. 12 Avenida, San Francisco, Mexico.
VAN ZANDT, R. L., 1890, IV, National Bank Examiner, Fort Worth.
VICK, JNO. C., 1904, III, Miller, Bryan.
VINTHER, F., 1897, III, Machinist and Draftsman, 602 W. 15th Ave., Pine Bluff, Ark.
VOELCKER, H. R., 1909, VII, Heating and Ventilating Engineer, Kansas City, Mo.
VON ROSENBERG, F. C., 1884, III, Attorney at Law, Austin.
WALDEN, W. J., 1900, I, M. S., 1903, Attorney at Law, 710 Crawford St., Houston.
WALKER, R. R., 1911, V, General Electric Co., Pittsfield, Pa.
WALKER, W. T., 1906, VI, Farming, San Saba.
WALLACE, L. W., 1903, III, Instructor in Car and Locomotive Design, Purdue University, West Lafayette, Ind.
WALLIS, J. W., 1909, V, 1st Lieutenant, Coast Artillery, Fort Fladger, Wash.
WANGEMANN, A. E., 1890, I, Wholesale Grocer, Brenham.
WARD, A. L., 1910, I, Manager, Oak Knoll Farm, Hagerman.
WARDEN, J. A., 1908, IV, 2nd Lieutenant, U. S. Army, Fort Sam Houston, San Antonio.
WARDEN, T. B., 1903, IV, U. S. Engineer's Office, Vicksburg, Miss.
WASHBURN, H. A., 1906, IV, Draftsman, S. P. R. R., Houston.
WASHBURN, JOHN E., 1905, III, Assistant Master Mechanic, National Carbon Co., Cleveland, Ohio.
WASHBURN, W. W., 1908, IV, Assistant City Engineer, Houston.
WASHINGTON, W. C., 1912, V, 2nd Lieutenant, U. S. Army, Fort Monroe, Va.
WATKINS, H. B., 1912, IV, Bowie.
WATKINS, R. C., 1895, IV, Right of Way Agent, S. P. Co., Houston.
WATKINS, W. A., 1892, IV, New Orleans, La.
*WATSON, D. H., 1882, III.
WATSON, W. D., 1893, I, Clerk, Markham.
WEATHERBY, E. P., 1903, III, Signal Engineer, T. & P. Ry., Dallas.
WEBB, THOMAS C., 1905, IV, 927 Franklin St., Waco.
WEIDEL, J., 1893, IV, Engineer of Construction, P. & N. T. Ry., Lubbock.
WEINERT, M. H., 1909, V, Teacher, Staples.
WELBOAN, J. S., 1906, I, Bank Clerk, Alvin.
WELBORN, G. M., 1912, V, Palestine.
WELHAUSEN, C. B., 1891, III, Merchant, Shiner.
WELHAUSEN, P. H., 1905, III, Assistant Cashier, First National Bank, Shiner.
WELLS, D. D., 1895, I, Physician, 18 San Diego, Acapulco, Mexico.
WENDTLAND, W. A., 1912, III, Shriner.
*WESSEN, J. M., 1883, III.
WESSENDORF, J. A., 1907, VI, Bookkeeper and Assistant Manager for J. A. Wessendorf, Richmond.
WEST, T. B., 1887, III, Agent, G., H. & S. A. Ry., Columbus.
WHELAN, J. J., 1891, III, Machinist, H. & T. C. Ry., Houston.
WHEAT, G. N., 1897, IV, Rock Springs.
WHEELER, A. C., 1905, I, Ranchman, Sue.
WHISENANT, W. H., 1899, II, Pharmacist, 117 E. Houston St., San Antonio.
WHITAKER, W., 1885, III, Oil Producer, Texarkana.
WHITE, G. R., 1895, IV, Banker, Brady.
WHITENER, H. L., 1891, I, Physician, 2009 E. Grand Ave., St. Louis, Mo.
WHITLOCK, E. H., 1886, III, Assistant Factory Manager, National Carbon Works, Cleveland, Ohio.
WHITTET, A. B., 1908, III, Ordnance Office, War Department, Washington, D. C.
WHITTET, H. E., 1909, V, Anchorage.
WHITTLE, C. T., 1899, III, Mining, Craig and 18th Sts., Pueblo, Colo.
WICKES, H. G., 1912, I, Stockman, Wheelock.
WINDROW, R. J., 1906, IV, Instructor in Civil Engineering, College Station.
WINKLER, A., 1900, I, Farmer, The Grove.
WIGHT, A. T., 1895, IV, General Merchandise, Roxton.
WIGNALL, C. L., 1909, VII, Superintendent of Construction, College Station.
WILLIAMS, I. L., 1903, III, Foreman of Construction, Signal Department Sunset Lines, Houston.
WILLIAMS, L. D., 1897, IV, Bookkeeper, Austin National Bank, Austin.
WILLIAMS, J. S., 1909, I, Farmer, Benton, Miss.
WILLIAMS, R. S., 1910, V, Eck Dynamo and Motor Co., Newark, N. J.
WILLIAMS, T. S., 1911, III, Draftsman, Milwaukee, Wis., Home Address, Cuero.
WILLIAMSON, H. H., 1911, I, Assistant in Extension Department, College Station.
WILLIFORD, C. L., 1911, III, Draftsman, City Engineer's Office, Houston.
WILSON, ASHLEY F., 1905, IV, Instructor, Cornell University, Ithaca, N. Y.
WILSON, A. G., 1912, IV, U. S. Engineer, Vicksburg, Miss.
WILSON, W., 1893, IV, Attorney at Law and County Judge, Calhoun County, Port Lavaca.
WIPPRECHT, W., 1884, I, B. S. A., 1899, Manager of the Bryan Press Co. and Tax Collector Brazos County, Bryan.
WISDOM, F. L., 1896, IV, Bookkeeper for Frost-Johnson Lumber Co., Shreveport, La.
WISE, W. F., 1909, IV, M., L. & T. R. R., Lafayette, La.
WOOD, E. G., 1911, IV, with Texas Bitulithic Co., Waco.
WOOD, W. M., 1888, IV, Assistant Disbursing Officer, I. C. Commission, Empire, Canal Zone.
WOODALL, HOWARD, 1905, III, Clerk, P. O. Service, San Marcos.
WOODS, H. A., 1911, IV, Newton.
WOODS, HENRY S., 1905, V, E. E., 1907, Sales Agent, General Electric Co., Kansas City, Mo.
WOODWARD, W. F., 1886, III, Banker, Denton.
WORTHING, E. E., 1903, III, Signal Supervisor, Sunset-Central Lines, Houston.
WRAY, JAY, 1908, V, Centre Point.
WRIGHT, A. A., 1906, I, Stockman, Alfred.
WRIGHT, B. F., 1911, V, Merchant, Waco.
WRIGHT, H. L., 1886, III, Secretary, Rio Grand Fire Insurance Co., San Antonio.

WURZBACH, W. A., 1888, IV, Lawyer, San Antonio.
WYCHE, T. S., 1910, V, Electrician, Ark. Valley Ry., Victor, Colo.
WYSE, IRA O., 1901, I, Dallas.
WYSE, J. T., JR., 1905, I, Traveling Salesman, Texas Oil Co., Greenville.
YAKEY, H. G., 1906, I, Farmer, Taylor.
YARBROUGH, R. W., 1901, III, Merchant and Planter, Red River Parish, Greening, La.
YOUNG, M. H., 1907, VI, Farmer, Primm.
YOUNGBLOOD, B., 1902, I, M. S., 1907, Director of Texas Agricultural Experiment Stations, College Station.
YOUNGBLOOD, TOM, 1912, I, Agriculturist for the Pittman-Harrison Seed Co., Sherman.

NUMBER OF GRADUATES BY CLASSES.

Class of 1878	2
Class of 1879	23
Class of 1880	7
Class of 1881	1
Class of 1882	12
Class of 1883	8
Class of 1884	14
Class of 1885	10
Class of 1886	11
Class of 1887	10
Class of 1888	17
Class of 1889	19
Class of 1890	14
Class of 1891	16
Class of 1892	25
Class of 1893	15
Class of 1894	31
Class of 1895	27
Class of 1896	22
Class of 1897	27
Class of 1898	23
Class of 1899	22
Class of 1900	26
Class of 1901	19
Class of 1902	27
Class of 1903	36
Class of 1904	36
Class of 1905	39
Class of 1906	46
Class of 1907	45
Class of 1908	49
Class of 1909	47
Class of 1910	69
Class of 1911	98
Class of 1912	98
	991
Counted twice	8
Total graduates	983
Deceased	50
	933

APPENDIX A

SPECIMEN ENTRANCE EXAMINATIONS.

For Admission to the Freshman Class.

Special attention is called to the following specimen entrance examinations. Young men intending to apply for admission are urged to satisfy themselves by actual trial before coming to College that they can answer such questions.

Algebra.

1. Factor: x^3+y^3, x^6-y^6, $x^2+5x-24$.

2. Simplify: $\left(\frac{a+b}{a-b}+\frac{a^2+b^2}{a^2-b^2}\right)\div\left(\frac{a-b}{a+b}-\frac{a^3-b^3}{a^3+b^3}\right)$.

3. Given: $\frac{x-y}{4}-\frac{2x-y-1}{3}=\frac{2y-2}{5}$ and

$\frac{2y+x-1}{9}=\frac{x+y}{4}$, find the values of x and y.

4. Find the square root of $10x^2-4x^3+9-12x+x^4$.

5. Simplify: $3a^2\times a^{\frac{1}{3}}$, $6a^2\div 3a^5$, $(a^2)^7$.

6. Reduce $\frac{3\sqrt{5}+2\sqrt{2}}{3\sqrt{5}-2\sqrt{2}}$ to an equivalent fraction having a rational denominator.

7. Solve: $\sqrt{x+6}+\sqrt{x+3}=3$.

8. Solve: $7-12x^2=17x$.

9. Determine by inspection the sum of the roots of $8x^2+13x-82=0$.

Geometry.

1. Only one perpendicular can be drawn to a given line from a given external point.

2. Two triangles are equal if two sides and the included angle of the one are equal, respectively, to two sides and the included angle of the other.

3. Two angles whose sides are perpendicular, each to each, are either equal or supplementary.

4. In the same circle, or in equal circles, equal chords are equally distance from the center.

5. An inscribed angle is measured by half the arc intercepted between its sides.

6. In a triangle ABC, AB=12, AC=14, BC=13. Find the segments of BC made by the bisector of the angle A.

7. Find the area of an equilateral triangle, if one side equals 8 feet.

8. The area of a circle is equal to half the product of its radius by its circumference.

Grammar.

"'A *clear* fire, a clean *hearth, and* the rigour *of* the game.' *This was* the *celebrated* wish of old Sarah Battle (*now* with God), *who,* next to *her* devotions, *loved* a good game at whist. * * * *
* * * * * * * * * *
* * * She sat *bolt* upright; and *neither* showed you her cards, nor desired to see *yours.* All people have their blind side—their superstitions; and I have *heard* her *declare,* under the rose, that Hearts was her favourite suit."

1. What parts of speech are the italicized words?
2. What is the grammatical function of each of the underscored words and expressions:
3. Point out the antecedent of each pronoun in the passage.
4. What is the difference between a phrase and a clause?
5. Classify the clauses in this passage from both the standpoint of form and the standpoint of function.
6. What is the difference in grammatical function between "side" and "that Hearts was her favourite suit"? Between "clean" and "who loved a game at whist"?
7. Account for the punctuation of the passage.
8. What do you understand by the grammatical terms: Case, Gender, Number, Person, Mood, Voice and Tense?

Composition.

1. Write a theme containing 300 words on the following subject: *The Most Embarrassing Position I Was Ever In.* Pay special attention to *clear* and forceful expression.
2. Write a letter to a friend, telling of your trip to college, and your first impressions of college life.

History.

1. Name the European nations that acquired colonial possessions within the present limits of United States, and locate their several claims.
2. What territory formed the original United States?
3. Give a brief account of the French and Indian war, stating the causes and results.
4. Name the important campaigns of the Revolutionary War, and write a short account of one of them.
5. Name an important event connected with the life of each of the following persons: Hamilton, Jefferson, Jackson, Calhoun and Webster.
6. What is the Monroe Doctrine, and what were the circumstances of its first announcement?
7. What was the Missouri Compromise?
8. Name five American inventors, and give the name of an invention made by each.
9. State the cause, name two of the principal battles, and give the result of the Mexican War.

10. Give a short history of the differences between President Johnson and Congress.
11. Name and discuss briefly the three leading religions of China.
12. Name the services that the Hebrews have rendered civilization.
13. Compare and contrast the characters of David and Solomon.
14. Who was the father of history? The last of the Pharaohs?
15. Give a brief account of the Trojan War.
16. Give an account of the early growth of Athens and Sparta.
17. Name the Punic Wars, and give the causes of each.
18. Who composed the first and second triumvirates?
19. Tell about the persecution of the Christians during the reign of Nero.
20. Tell about the capture and destruction of Jerusalem by Titus during Vespasian's reign.

For Admission to the two Year Courses.

Algebra.

1. Multiply $2a^2-3ab+5b^2$ by $2a^2+3ab-5b^2$.
2. Divide $21a^6b+20b^4-22a^2b^3-29a^4b^2$ by $3a^2b-5b^2$.
3. Factor: x^3+y^3, x^4-y^4 and $x^2-23x-24$.
4. Find the highest common factor of x^2-9 and x^2+3x.
5. Find the lowest common multiple of $x^2+3x-10$ and $x^2-3x-40$.
6. Simplify: $\frac{x-1}{2}-\frac{x-2}{3}+\frac{x+7}{6}$
7. Simplify: $\frac{8a^2}{a^2-b^2}\times\frac{a+6}{2a}$
8. Solve: $\frac{5x}{z+3}-\frac{9}{x-2}=5$.

Grammar and Composition.

1. (a) What is a sentence?
   (b) Explain how sentences are divided according to use and form. Give examples.
2. (a) Show clearly the difference between a phrase and a clause.
   (b) What is the difference between an independent and a dependent clause?
3. Define the following grammatical terms: gender, case, voice, mode, and tense.
4. (a) What is conjugation of verbs?
   (b) Give synopsis of the conjugation of the verb "choose" in active voice, indicative mode.
5. In the following selection, (a) analyze the sentences; (b) parse the nouns and verbs:

   Consider what you have in the smallest chosen library. A company of the wisest and wittiest men of all civilized countries have set in order the results of their learning and wisdom.
6. Write a 200-word composition on the following subject:

   "My Early School Days."

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BULLETIN

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

N. S. Vol. I APRIL, 1914 No. 4

THIRTY-EIGHTH

ANNUAL CATALOGUE

SESSION 1913-14

Published quarterly by the Agricultural and Mechanical College of Texas

Entered as second class matter August 7, 1913, at the postoffice at College Station, Texas, under the Act of August 24, 1912.

AUSTIN, TEXAS
VON BOECKMANN-JONES CO., PRINTERS
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1914

CALENDAR

1914

JULY

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COLLEGE CALENDAR.

1914.

Deficiency Examinations, Monday, Tuesday, September 21, 22.
First term begins Tuesday, September 22.
Registration of new students, September 22.
Entrance Examinations, September 23, 24.
Registration of old students, September 24.
Recitations begin September 25.
National Holiday, Thanksgiving Day.
Christmas Holidays begin Wednesday, December 23.

1915.

Last Day of the Christmas Holidays, Sunday, January 3.
Recitations resumed, Monday, January 4, 8 a. m.
Short Winter Course in Highway and Rural Engineering begins Monday, January 11.
Second Term begins Thursday, February 4.
National Holiday, February 22.
State Holiday, March 2.
State Holiday, April 21.
Commencement Sermon, Sunday, June 6.
Exhibition of Departments and of Work of Students, June 7.
Commencement Day, June 8.

BOARD OF DIRECTORS.

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JOHN I. GUION, Vice-President	*Ballinger.*
WALTON PETEET	*Waco.*
J. ALLEN KYLE	*Houston.*
L. J. HART	*San Antonio.*
R. L. BENNETT	*Paris.*
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T. E. BATTLE	*Marlin.*
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IKE S. ASHBURN, Secretary	*College Station.*

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Dean of the School of Engineering.

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GEORGE SMART,
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Professor of Military Science and Tactics and Commandant of Cadets.

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Associate Professor of Mathematics.

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H. E. HAYDEN, M. A.,
Assistant Professor of Biology.

G. H. BLACKMON, B. S.,
Assistant Professor of Horticulture.

---

*On leave of absence.

O. B. WOOTEN, B. S.,
Assistant Professor of Electrical Engineering.

A. T. POTTS, B. S.,
Assistant Professor of Horticulture.

G. A. GEIST, B. S.,
Assistant Professor of Drawing.

W. P. NELSON, JR.,
Assistant Professor of Chemistry.

H. B. GORDON, M. S., Ph. D.,
Assistant Professor of Chemistry.

J. A. HERRINGTON, B. S.,
Instructor in Mechanical Engineering, Superintendent of Shops.

D. C. JONES, B. A.,
Instructor in Mathematics.

L. L. CHAPPELLE,
Instructor in Mechanical Engineering.

IRBY C. NICHOLS, M. A., M. S.,
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R. G. BRESSLER, M. A.,
Instructor in English.

W. H. McPHEETERS, B. S.,
Instructor in Physics.

D. B. COFER, A. B.,
Instructor in English.

HUGH CASSIDAY, M. A.,
Instructor in Biology.

F. J. SKEELER, B. S.,
Instructor in Physics.

*J. D. BOND, B. A.,
Instructor in Mathematics.

P. G. GUNTER, M. A.,
Instructor in English.

F. W. REDLICH, B. S.,
Instructor in Drawing.

R. C. DUNN, D. V. M.,
Instructor in Veterinary Science.

R. B. PEARCE, B. S.,
Instructor in Civil Engineering (Farm Terracing).

E. E. McADAMS, B. S.,
Instructor in Physics.

---

*On leave of absence.

F. J. BECHERT, M. E.,
Instructor in Mechanical Engineering.

B. J. MANSFIELD, B. S.,
Instructor in Drawing.

F. W. BELL, B. S.,
Instructor in Animal Husbandry.

L. L. CLICK, B. S. E.,
Instructor in English.

C. N. KENNEDY, B. S.,
Instructor in Animal Husbandry.

W. P. POWELL, M. A.,
Instructor in English.

C. A. WOOD, B. S.,
Instructor in Agronomy.

*M. D. MORLEY, B. S.,
Instructor in Mechanical Engineering.

E. C. GEE, B. S.,
Instructor in Agronomy.

E. L. REED, B. A.,
Instructor in Biology.

S. W. BILSING, B. S., M. A.,
Instructor in Entomology.

T. C. CHANDLER, A. B.,
Instructor in English.

G. P. WILSON, A. B.,
Instructor in English.

J. E. ABSHIRE, A. M.,
Instructor in History.

J. A. CLUTTER, B. S.,
Instructor in Dairy Husbandry.

E. F. BATES, M. S.,
Instructor in Physics.

M. K. THORNTON, B. S.,
Instructor in Chemistry.

L. B. BURK, B. S.,
Instructor in Animal Husbandry.

C. E. HANSON, A. B., B. S.,
Instructor in Mechanical Engineering.

C. A. NASH, B. S.,
Instructor in Electrical Engineering.

---

*Resigned December 1, 1913.

*A. E. NICHOLS, B. A.,
Instructor in Biology.

F. STEWART, B. S.,
Instructor in Agronomy.

G. W. HANSON, B. S.,
Instructor in Mechanical Engineering.

J. W. NEWTON, B. S.,
Assistant in Chemistry.

W. T. BRYANT, B. S.,
Assistant in Chemistry.

A. E. TALBOT, B. S.,
Assistant in Dairy Husbandry.

E. L. AYERS,
dent Assistant in Biology.

E. L. TANNER,
Student Assistant in Biology.

L. G. RICH,
Student Assistant in Agronomy.

COLLEGE EXTENSION.

C. M. EVANS, M. S. A.
Superintendent Agricultural Extension.

H. CORBETT MILLENDER,
Secretary.

**O. H. SELLERS, B. S. A.,
In Charge of Correspondence Courses.

D. T. STEVENS, B. S.
Assistant.

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*Resigned January 29, 1914.
**Resigned January 1, 1914.

DEMONSTRATION WORK IN CO-OPERATION WITH THE U. S. DEPARTMENT OF AGRICULTURE.

W. F. PROCTOR,
State Agent in Demonstration Work.

J. L. QUICKSALL,
Assistant State Agent in Demonstration Work.

T. O. WALTON,
M. T. PAYNE,
WILLIAM GANZER,
G. W. ORMS,
District Agents in Demonstration Work.

H. H. WILLIAMSON,
Assistant State Agent in Boys' and Girls' Clubs.

MISS BERNICE CARTER,
Assistant in Club Work.

TEXAS AGRICULTURAL EXPERIMENT STATIONS.

Main Station, College Station.

PERSONNEL OF THE STAFF.

ADMINISTRATION:

B. YOUNGBLOOD, M. S., *Director.*
A. B. CONNER, B. S., *Assistant Director.*
CHAS. A. FELKER, *Chief Clerk.*
A. S. WARE, *Secretary.*

DIVISION OF VETERINARY SCIENCE:

M. FRANCIS, D. V. M., *Veterinarian in Charge.*
H. SCHMIDT, D. V. M., *Assistant Veterinarian.*

DIVISION OF CHEMISTRY:

G. S. FRAPS, Ph. D., *Chemist in Charge.*
J. B. RATHER, M. S., *Assistant Chemist.*
WILLIAM LEVIN, A. B., *Assistant Chemist.*
J. W. CHEWNING, B. S., *Assistant Chemist.*

DIVISION OF HORTICULTURE:

H. NESS, M. S., *Horticulturist in Charge.*
W. S. HOTCHKISS, *Horticulturist.*

DIVISION OF ANIMAL HUSBANDRY:

J. C. BURNS, B. S., *Animal Husbandman in Charge.*

DIVISION OF ENTOMOLOGY:

WILMON NEWELL, M. S., *Entomologist in Charge.*
F. B. PADDOCK, B. S., *Entomologist.*

DIVISION OF AGRONOMY:

A. B. CONNER, B. S., *Agronomist in Charge.*
A. H. LEIDIGH, B. S., *Agronomist in Charge of Soil Improvement.*
H. H. JOBSON, B. S., *Assistant Agronomist.*
R. E. DICKSON, B. S., *Assistant Agronomist.*

DIVISION OF PLANT PATHOLOGY AND PHYSIOLOGY:

F. H. BLODGETT, Ph. D., *Plant Pathologist and Physiologist in Charge.*

***DIVISION OF FARM MANAGEMENT:**

REX. E. WILLARD, M. S., *Farm Management Expert in Charge.*

DIVISION OF FEED CONTROL:

W. L. BOYETT, *State Feed Inspector.*
J. H. ROGERS, *Deputy Feed Inspector.*
W. H. WOOD, *Deputy Feed Inspector.*
T. H. WOLTERS, *Deputy Feed Inspector.*
R. B. EHLINGER, B. S., *Deputy Feed Inspector.*

SUB-STATION NO. 1, Beeville, Bee County:

E. E. BINFORD, B. S., *Superintendent.*

SUB-STATION NO. 2, Troup, Smith County:

W. S. HOTCHKISS, *Superintendent.*
R. W. COX, B. S., *Scientific Assistant.*

SUB-STATION NO. 3, Angleton, Brazoria County:
N. E. WINTERS, B. S., *Superintendent.*
J. W. JACKSON, B. S., *Scientific Assistant.*

***SUB-STATION NO. 4, Beaumont, Jefferson County:**
E. M. JOHNSTON, B. S., *Superintendent.*

SUB-STATION NO. 5, Temple-Belton, Bell County:
A. K. SHORT, B. S., *Superintendent.*

SUB-STATION NO. 6, Krum, Denton County:
T. W. BUELL, B. S., *Superintendent.*

SUB-STATION NO. 7, Spur, Dickens County:
I. S. YORK, *Superintendent.*
E. W. HARRISON, B. S., *Scientific Assistant.*

SUB-STATION NO. 8, Lubbock, Lubbock County:
V. L. CORY, B. S., *Superintendent.*

SUB-STATION NO. 9, Pecos, Reeves County:
H. C. STEWART, B. S., *Superintendent.*
J. M. THOMSON, B. S., *Scientific Assistant.*

SUB-STATION NO. 10, College Station, Brazos County:
(Feeding and Breeding Sub-station.)
C. S. SCHARFF, *Acting Superintendent.*

SUB-STATION NO. 11, Nacogdoches, Nacogdoches County:
G. T. McNESS, *Superintendent.*

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*In co-operation with the United States Department of Agriculture.

HISTORICAL SKETCH.

The Agricultural and Mechanical College of Texas, like the land grant institutions in other States of the Union, owes its origin to an act of Congress approved July 2, 1862. This act donated public lands to the several States and Territories which might provide colleges for the benefit of agriculture and the mechanic arts, and directed the Secretary of the Interior to issue land scrip to the States in which there was not the requisite quantity of public land. The act further directed that the money derived from this source should constitute a perpetual fund, the principal of which should remain forever undiminished, and the interest of which should be inviolably appropriated by each State to the endowment, support and maintenance of at least one technological college, whose leading object should be, without excluding other scientific and classical studies, and including military tactics, to teach branches of learning pertaining to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life. It was further provided that the provisions of the act should be formally accepted by the State Legislature. By joint resolution approved November 1, 1866, the Legislature of Texas accepted the provisions of the Congressional legislation, and accordingly there was issued to Texas scrip for 180,000 acres of public land, which was sold for $174,000. This amount was invested in Texas 7 per cent gold frontier bonds. At the time of the opening of the College there was an addition to the fund of accrued interest amounting to $35,000, which was invested in 6 per cent State bonds.

In an act approved April 17, 1871, the Legislature provided for the establishment of the Agricultural and Mechanical College. By the terms of this act and later acts, appropriations aggregating $187,000 were made for buildings and equipment. A commission to locate the College was created by the Legislature. After careful investigation, the commission accepted the proposition of the citizens of Brazos county, and located the institution on a tract of 2416 acres of land in that county. Finally, the constitutional convention of 1876 constituted the College a branch of the University of Texas, and, in accordance with the terms of the Federal legislation, designated it as an institution for instruction in agriculture and the mechanic arts and the natural sciences connected therewith. The convention further provided that the Legislature should have the right to levy taxes for the maintenance and support of the Agricultural and Mechanical College.

The College was formally opened for the reception of students October 4, 1876.

GROWTH OF THE COLLEGE.

Since 1876, by means of financial aid voted by Congress and of appropriations made by the State Legislature, there has been developed a considerable foundation at the College for instruction, for investigation, and for experiment. In 1887 Congress voted the sum of $15,000 a year to each State for the purpose of establishing experiment stations to conduct original research on the physiology of plants and animals, the diseases of plants and animals, the chemical composition of useful plants, the advantages of rotation of crops, climatology, analyses of soils and waters, the composition of manures, the value of grasses and forage crops, the composition and digestibility of the different kinds of food for domestic animals, the scientific and economic questions involved in the production of butter and cheese, and such other researches and experiments in agriculture as might be deemed advisable.

In 1890 Congress further appropriated the sum of $15,000 a year with an annual increase of $1000 for ten years, and provided that the amount appropriated should be equitably divided between the Agricultural and Mechanical College and an institution intended for the technical education of colored students.

In 1907 Congress appropriated the sum of $5000, with annual increase of $5000, for four years.

In 1895 the Legislature made provision for an experiment station at Beeville, and in 1900 for a second experiment station at Troup.

In 1910 eight additional stations were established in different parts of the State.

At College Station there are nine dormitories, an academic building in course of erection for offices and section rooms, a mess hall, an assembly hall, an agricultural and horticultural building, a chemical and veterinary building, a civil engineering building, an electrical engineering building, an experiment station building, a mechanical engineering building, a textile engineering building, a hospital, a veterinary hospital, a farm implement building, a natatorium, a water, ice and light plant, a laundry, a sewerage system, barns and outhouses, and residences for instructors and officers, with a total valuation of approximately $1,150,000.

GOVERNMENT.

The government of the College is vested in a Board of nine directors, appointed by the Governor for a term of six years.

ADMINISTRATION.

The immediate regulation and direction of the affairs of the College are delegated by the Board of Directors to the President and the Faculty.

ORGANIZATION.

The College comprises the School of Agriculture and the School of Engineering. The Faculty of the School of Agriculture, and the Faculty of the School of Engineering have supervision over the educational work of the respective schools. The Faculty of the College directs the general policy of the institution and has supervision over matters not specifically assigned to the other Faculties.

DEPARTMENTS.

The College has now in operation the following departments of instruction:

Agricultural Education.
Agronomy.

Animal Husbandry.
Architecture.
Biology.
Chemistry and Chemical Engineering.
Civil Engineering.
Dairy Husbandry.
Drawing.
Electrical Engineering.
English.
Entomology.
History and Economics.
Horticulture.
Mathematics.
Mechanical Engineering.
Military Science and Tactics
Physics.
Textile Engineering.
Veterinary Science.

Provision is also made for courses in Agricultural Engineering, in Languages and for correspondence courses.

OBJECTS.

The objects of the College are indicated in the provisions of the laws of Congress and of the State Constitution and statutes. Briefly stated, the College was established for the purpose of furnishing an opportunity to the young men of Texas to qualify themselves to do expert work in all industrial pursuits and professions; to furnish information of a scientific and practical character to the people of the State actually engaged in farming, in horticulture, in dairying, and in stock raising, and in every possible way to advance all industrial interests of the State. To meet the urgent demand for men of industrial skill, the work of the College has been so planned as to train men in the scientific principles of agriculture, horticulture, cattle raising and related pursuits, and in chemical, civil, electrical, mechanical and textile engineering, drawing and architecture. As rapidly as the funds of the College will allow, provision will be made for expert industrial work in all other directions.

The work of the College in behalf of those actually engaged in industrial pursuits is carried on through the experiment stations, including the main station established at College Station and the ten substations, through the divisions of agronomy, animal husbandry, chemistry, entomology, horticulture and veterinary science. Through the experiment stations information is furnished to farmers and others in the form of bulletins and through press notices and correspondence. At present there are 40,000 farmers whose names appear on the regular mailing list of the experiment station. As opportunity permits, the members of the stations and agricultural staffs, the superintendent of the extension department, the professor of highway engineering and the instructor in terracing visit different sections of the State for the purpose of giving institute lectures to various associations and gatherings of agriculturists. It will be seen that it is by no means the exclusive mission of the College to furnish instruction to the thousand or more students who matriculate in the institution; a much wider constituency than this is reached through the press, through correspondence, correspondence courses, and lectures.

The military feature, made necessary by the acceptance of the Federal grants, is an important adjunct to the other work of the College. It is conducive to health and to bodily grace and strength, and cultivates habits of strict attention and of obedience, punctuality, neatness and regularity.

METHOD AND SCOPE OF INSTRUCTION.

In all the courses of instruction the fundamental idea is education in practical science, particularly in agriculture and in engineering. With this idea in view, instruction is given in English, history, economics, mathematics, physics, chemistry and in other studies which lie at the foundation of a sound education and furnish the best preparation for the more technical studies of the several courses. Instruction is given by the use of text-books, by lectures and recitations; also by practice in the shop, field, laboratory, and drawing room. These practical exercises have a high educational value, and serve a useful purpose in fixing and rendering clear the ideas presented in the class room; they have also a practical value, for they are, in great measure, examples of just such problems as the scientific agriculturist or engineer will encounter in the pursuit of his calling. For convenience of instruction, the classes are subdivided into sections of suitable size. Unannounced written exercises and tests are given at the discretion of instructors. Regular written examinations are held at the end of each term.

DISCIPLINE.

By reason of its isolated location the College is able to exercise effective oversight over the student body. The authorities do not undertake to restrain the liberty of the student more than is necessary for the securing of good results in scholarship and conduct. Each student is expected at all times to conduct himself as a gentleman, and to attend promptly and faithfully to all his duties.

Students are not allowed to leave the College grounds, either to visit neighboring towns, or their homes, without first securing a furlough from the Commandant of Cadets or from the President.

When a student overstays a furlough which extends through the Christmas holidays or the summer vacation, his name will be dropped from the rolls.

The College encourages the attendance of young men who have a serious purpose and who wish to secure a thorough technological training. The Faculty will do everything in its power to assist every cadet in securing a sound education and in forming correct habits, but will not tolerate the presence of young men who evince a determination not to study and not to comply with reasonable regulations.

For improper conduct or failure to keep up with his studies, a student may at any time be required to withdraw from College.

In order to keep parents systematically informed concerning the progress of their sons, reports, showing class standing and record of conduct, are sent out from the Dean's office at the end of each term.

LOCATION.

The College is situated at College Station, in the county of Brazos, and is 350 feet above sea level. The Houston & Texas Central and the International & Great Northern Railroads run through the grounds, daily trains stopping at the stations, about 650 yards from the academic building. Students and visitors are advised to take trains arriving in the daytime.

POSTOFFICE.

College Station is a money order postoffice. Letters intended for persons at the College should not be directed to Bryan. At College Station there are telegraph and express offices.

HEALTH.

The buildings of the College are situated on the crest of a wide divide, with sufficient slope in every direction to insure proper drainage. The health of the student body, as shown by the daily records of the institution, is all that could be expected at any location in the State.

The work of sanitation is carried on throughout the entire year, with especial reference to the eradication of mosquitoes, flies and other disease-bearing agencies.

Drinking water is supplied by wells varying in depth from 300 feet to 1300 feet.

The barracks are inspected daily, and are kept neat and clean throughout. The rooms are well lighted and comfortable.

Drill, shop and field practice, work and outdoor athletic sports furnish sufficient and varied exercise and contribute very much to the maintenance of health and proper physical development.

There is no endemic disease at the College; most of the sickness is the result of indiscretion on the part of the student, or is due to the introduction of some mild epidemic disease, such as measles or mumps.

HOSPITAL.

The hospital is a two-story frame structure. There are three wards with bath, toilet rooms, etc., capable of accommodating about twenty-five patients, with several small rooms for the isolation of patients suffering from any common epidemic disease, such as mumps or measles. The sick in the hospital are carefully looked after by competent trained nurses under the direction of the College Surgeon. The diet of sick students is a matter of no little concern, and great care is taken to supply such nourishment as is best adapted to the condition of each patient. Convalescent patients after leaving the hospital are given orders by the surgeon for special diet at the mess hall for such time as is found necessary.

INFORMATION CONCERNING ADMISSION.

BEGINNING OF THE SESSION.

The thirty-ninth annual session will open Tuesday, September 22, 1914, and will close Tuesday, June 8, 1915.

Intending students should write to Charles E. Friley, Registrar, for application blanks.

REQUIREMENTS FOR ADMISSION.

To enter the College the applicant must be at least sixteen years old and physically able to perform the duties of a cadet. He must present a satisfactory certificate of good moral character from his last instructor. If he comes from another college he must present a certificate showing that he was in good standing when he left it. He must be free from contagious or infectious disease.

VACCINATION.

Each applicant for admission must present a certificate signed by a physician in one of the forms given below, that he has had smallpox or has been successfully vaccinated:

1. ...., Texas, ...191....
This is to certify that.......................has had smallpox.
(Signed.) .... M. D.

2. ...., Texas,............ 191....
This is to certify that..........................has been successfully vaccinated at two different times, the dates being..............
....
(Signed.) .... M. D.

3. ...., Texas, ...191....
This is to certify that..........................has been successfully vaccinated within the last five years.
(Signed.) .... M. D.

4. ...., Texas ....191......
This is to certify that I have today vaccinated...................
(Signed.) .... M. D.

Candidates who have complied with the above requirements may be admitted to the Freshman class in one of three ways: (a) by examination, (b) on diploma from an affiliated school, (c) on special approval.

A. ADMISSION BY EXAMINATION.

Candidates for admission to the Freshman class in the session 1914-15 will be examined in the subjects mentioned below. The treatment given in the text-books indicated will suffice for the purpose of these examinations.

1. Algebra through quadratics, including the fundamental operations, factoring, highest common factor, lowest common multiple, fractions, equations of the first degree with one or more unknown quantities, involution, evolution, theory of exponents, radicals, equations containing radicals, quadratics in one unknown quantity. Complete Secondary Algebra, *Fisher & Schwatt.*

2. Plane Geometry. (Not required for admission to the School of Agriculture.)

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces.

Plane Geometry, *Wentworth-Smith.*

3. Advanced English Grammar and Composition. *Maxwell.*

4. History of the United States. *Cooper, Estill and Lemon.*

5. Ancient History, as treated in *Myers'* General History.

Specimen entrance examination questions may be found in the appendix.

SCHEDULE OF ENTRANCE EXAMINATIONS.

FOR ADMISSION TO THE FRESHMAN CLASS.

Wednesday, September 23.

Algebra, 8 a. m. English, 2 p. m.

Thursday, September 24.

Geometry, 8 a. m. History, 2 p. m.

FOR ADMISSION TO THE TWO-YEAR COURSES.

Wednesday, September 23.

Algebra, 8 a. m. English, 2 p. m.

B. ADMISSION ON DIPLOMA.

Graduates of affiliated schools are admitted to the Freshman class at the beginning of the session without examination. For list of affiliated schools, see page 178.

C. ADMISSION ON SPECIAL APPROVAL.

Young men over eighteen years of age, on presentation of certificates from their last instructors that they have satisfactorily completed the required subjects, may, with the consent of the Dean and professors concerned, be admitted without examination. Such certificates should state how far the several subjects were pursued and what text-books were used.

ADVANCED STANDING.

Applicants for advanced standing and those who come after the time set for the entrance examinations will be examined also upon the work already gone over by the class they propose they enter.

SCHOLARSHIP REQUIREMENTS FOR ADMISSION TO THE FRESHMAN CLASS, EFFECTIVE SEPTEMBER, 1915.

Effective September, 1915, the scholarship requirement for full admission to the Freshman class will be fourteen units of high school work.

Definition of a unit.—A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work.

This statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but, under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute hours or their equivalent. Schools organized on any other than a four-year basis can, nevertheless, estimate their work in terms of this unit.

A four years' secondary school curriculum should be regarded as representing not more than sixteen units of work.

A candidate presenting twelve units will be admitted conditionally, the condition to be removed within two years either by examination or by substituting work offered by the College.

PRESCRIBED UNITS.

Of the fourteen units required for full admission the following will be prescribed for all candidates:

Algebra	1½ units
Plane Geometry	1 unit
English	3 units

ELECTIVES.

To make up the total of fourteen units the candidate may offer any of the following:

Agriculture	1, 2, 3, or 4 units
American History	½ or 1 unit
Ancient History	1 unit
Bookkeeping	½ unit
Botany	½ or 1 unit
Chemistry	1 unit
Civics	½ unit
Drawing	½ or 1 unit
English	1 unit
English History	1 unit
French	1 or 2 units
German	1 or 2 units

Latin	1, 2, 3 or 4 units
Manual Training	½ or 1 unit
Medieval and Modern History	1 unit
Physics	1 unit
Physiography	½ unit
Physiology	½ unit
Spanish	1 or 2 units
Solid Geometry	½ unit
Stenography	½ unit
Trigonometry	½ unit
Typewriting	½ unit

Candidates for admission to the School of Engineering who do not present Solid Geometry for entrance will be required to take that subject in the first term. Special classes will be formed for this purpose.

No subject presented for admission will be counted toward a degree.

CLASSIFICATION OF STUDENTS.

CANDIDATES FOR DEGREES.

Candidates for degrees are assigned to one of the four classes—Freshman, Sophomore, Junior, Senior, according to prescribed rules. They are further classed as regular or irregular. A regular student is one who takes the work of one of the sections into which the several classes are divided, according to the schedule of that section.

An irregular student is one whose work does not conform to that of any given section. The irregularity may be due to deficiences, extra work, or other reasons.

Students in the two-year courses are classified in a similar way.

SPECIAL STUDENTS.

Young men over 21 years of age, not candidates for a degree, may upon written application, approved by the Dean, be classed as special students. Young men between the ages of 18 and 21, desiring to be classed as special students must have the written consent of parent or guardian and the approval of the Dean. A special student must take work for which he is qualified, amounting to at least 18 hours a week. In order to be admitted to the work of any department he must have the consent of the head of the department; and his course as a whole is subject to the approval of the Dean.

A special student who may desire to become a candidate for a degree must comply with the requirements for admission to one of the classes of the four-year course and must have the consent of the Dean.

ADVISERS FOR FIRST-YEAR STUDENTS.

Each student on entering College will be assigned to a member of the teaching staff, who will act as his adviser and give him helpful counsel in matters pertaining to his work or to any feature of his college life.

REGISTRATION.

Upon arrival at the College, young men intending to enter will report at once to the Commandant for temporary assignment to quarters, and for full information in regard to registration.

Tuesday, September 22, will be devoted to the registration of new students; Thursday, September 24, to the registration of old students. Recitations will begin Friday, September 25.

REGISTRATION FEE.

Every student is required to register when he first enters College and thereafter at the beginning of each term.

Upon registering for the first time he is charged a registration fee of three dollars. He pays this fee only once unless his connection with the College should later be served; in that case he must pay the registration fee again in order to re-enter.

LATE REGISTRATION.

All students, except those registering for the first time, who do not complete their registration on the days set for that purpose, will be charged a fee of three dollars for late registration.

In the case of irregular and special students, registration is not complete until their assignment cards are returned, properly signed, to the Registrar.

EXPENSES FOR THE SESSION.

The fixed charges are:

Trust fund, payable on entrance	$ 5 00	
Incidental fee, payable on entrance	5 00	
Medical fee, payable on entrance	8 00	
Maintenance, First Term, payable on entrance	80 00	
Maintenance, Second Term, payable February 4	80 00	
Laboratory fee, payable on entrance	1 25	
Laboratory fee, payable February 1	1 25	
		$180 50

Other necessary expenses are:

Uniform, payable on entrance, about	$30 00	
Books, from $15 to	20 00	
		$ 50 00
Total		$230 50
For Freshmen in the engineering courses, drawing instruments, about		$ 10 00

Payment should be made by bank exchange, money order, or in cash. Personal checks will not be accepted.

The trust fund is to pay for property damaged or destroyed, and will be returned to the parent if there is no charge of this kind against the student.

The incidental fee is used for sundry incidental expenses, such as printed forms, examination books, etc.

The medical fee covers the professional services of the College Surgeon and of the hospital staff.

Incidental and medical fees will in no case be refunded.

Maintenance includes board, fuel, washing, lights, room rent, single bedsteads, mattresses, tables, washstands, chairs.

Each student is required to keep on hand a supply of bed clothing for single beds, towels, etc. For winter he should provide himself with an overcoat and a mackintosh.

Students are required to take their meals at the Mess Hall.

Payment for each term must be made in advance. A student entering during a term will be charged maintenance for the remainder of that term only.

A student once entering for a term, and having paid for that term, or the balance of it, forfeits all claim to said payment in case of voluntary withdrawal from the College before the expiration of said term, except in case of sickness disqualifying him for the discharge of his duties for the rest of the term. When such sickness takes place at the College, it must be attested by the College Surgeon before the student can receive the balance of his maintenance fund.

The expenses of a graduate student are $5.00 for material used in laboratories and practical work, and $8.00 for medical fee, with charge for maintenance as above.

Day students pay $18, to cover trust fund, incidental fee, and medical fee, as above.

UNIFORM.

Every cadet must keep on hand in good condition: 1 regulation blouse, 2 pairs regulation gray trousers, 2 pairs regulation white trousers, 1 regulation cap, 1 regulation hat, 6 regulation shirts, 6 standing white collars, 6 turned down white collars, 1 pair black shoes, 4 pairs white gloves, 1 regulation tie, 1 regulation belt, and an ample supply of underwear.

In addition, each student must have, for shop and field practice, a working suit of drilling, which costs from $1.50 to $2.50.

The blouses, trousers, caps and hats are made by contract, and students are required to purchase from the contractors, in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons, and may secure the best material for the lowest price. All parts of the equipment are carefully inspected by the Commandant of Cadets, in order that good fits and satisfactory materials may be secured.

By means of the contract system not only is there a saving effected, but there is also furnished a guarantee that the material will be of the requisite pattern and quality. For the efficient enforcement of the arrangements entered into, the College authorities require that each student make his purchases through the machinery provided at the College, and that a deposit sufficient to cover the purchase price of the equipment be placed in the hands of the Treasurer when the cadet matriculates. No suit will be ordered until such deposit has been made.

The other regulation articles may be purchased at the exchange store mentioned below.

It should be distinctly realized that this clothing is not an additional expense, but that it is the cheapest clothing that cadets can wear. It is very neat in appearance, and is serviceable and durable.

CADET EXCHANGE—BOOKS AND OTHER SUPPLIES.

The College runs an exchange store for the purpose of supplying necessary articles to students at the lowest possible cost. The store carries in stock, books, stationery, drawing instruments, regulation articles of the uniform, toilet articles, etc. These goods are sold at prices just sufficient to cover cost and operating expenses.

Text-books cost from $15 to $20 a year; drawing instruments for Freshmen in the Engineering courses about $10. Laboratory fees are from $2.00 to $5.00.

STUDENT LABOR.

The Legislature has provided a fund by which a limited number of industrious young men may defray a part of their expenses by working for the College at such times as their regular duties will permit.

The rate of pay is made to depend upon the character of the work, and the manner in which it is performed. A student should not count upon earning more than $40 a session.

EXPULSIONS.

At a joint session of the Board of Regents of the University of Texas and the Board of Directors of the Agricultural and Mechanical College, held at College Station, Texas, from June 30 to July 1, 1896, the following order was made:

> "It is ordered, that hereafter, when any student shall be dismissed or expelled from either of the branches of the University of Texas on account of any immoral or other conduct which shall render him an unfit character to be matriculated in any of such branches, it shall thereupon be the duty of the branch so expelling or dismissing such student to immediately notify the other branches of their action, whereupon such other branches shall refuse to receive such student for matriculation, or even for examination, should he apply therefor, until the branch which has so expelled or dismissed him has rescinded or reconsidered its former action, and recommended such student for admission into such other branch at which he may apply."

COURSES OF STUDY.

There are eight regular courses, extending through four years, and leading to the degree of Bachelor of Science, the particular course pursued being specified in the diploma.

I. Course in Agriculture.
III. Course in Mechanical Engineering.
IV. Course in Civil Engineering.
V. Course in Electrical Engineering.
VI. Course in Textile Engineering.
VII. Course in Architectural Engineering.
VIII. Course in Chemical Engineering.
IX. Course in Architecture.

In addition the following courses are offered:

(a) A graduate course in Agriculture, leading to the degree of Master of Science in Agriculture.

(b) Graduate courses leading to the degree of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, Textile Engineer.

(c) A two-year course in Agriculture.

(d) A two-year course in Textile Engineering.

(e) A two-year course for electricians.

(f) A two-year course for power plant operators.

(g) A one-year course in telephony.

Note.—In addition to the work in the curricula of the several courses, students taking English are required to attend conferences with their instructors as stated in the description of the courses in English; and all undergraduates have military drill. See Course 3, Military Science, page 164.

The School of Agriculture

FACULTY OF THE SCHOOL OF AGRICULTURE.

CHARLES PURYEAR, M. A., C. E.,
President pro tempore.

E. J. KYLE, M. S. A.,
Dean.

CHARLES PURYEAR, M. A., C. E.,
Dean of the College and Professor of Mathematics.

M. FRANCIS, D. V. M.,
Professor of Veterinary Science.

E. J. KYLE, M. S. A.,
Professor of Horticulture.

C. P. FOUNTAIN, A. M.,
Professor of English.

O. M. BALL, M. A., Ph. D.,
Professor of Biology.

O. F. CHASTAIN,
Professor of History and Economics.

WILMON NEWELL, M. S.,
Professor of Entomology.

J. OSCAR MORGAN, M. S. A., Ph. D.,
Professor of Agronomy.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

LEVI G. BROWN, First Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics and Commandant of Cadets,

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

M. L. HAYES, A. M.,
Professor of Agricultural Education.

J. W. RIDGWAY, M. S.,
Acting Professor of Dairy Husbandry.

W. T. WRIGHT, A. B.,
Acting Professor of Physics.

R. P. MARSTELLER, D. V. M.,
Associate Professor of Veterinary Science.

C. M. EVANS, M. S. A.,
Superintendent of Agricultural Extension.

COURSES IN THE SCHOOL OF AGRICULTURE.

In the School of Agriculture there is offered a four-year course in agriculture leading to the degree of Bachelor of Science.

It is the object of this course to give young men a thoroughly practical and scientific training in those branches of science which relate to agronomy, animal husbandry, dairy husbandry, horticulture and agricultural engineering. It is also intended that the student's general training shall not be neglected, and to this end he is given instruction in the English language, history and mathematics, in addition to the special instruction in the sciences of chemistry, physics, botany and animal anatomy and physiology.

The twenty-four hundred acres in the farm, one hundred and twenty milch cows (Jersey, Holstein and grades) hogs, work stock, tools and machinery, silos, etc., furnish illustrations of practical value to the student. The dairy is fitted with milk separators, churns, butter-workers and milk-testing machines.

The location of the Texas Agricultural Experiment Station at the College makes it possible to give students the benefit of experiments conducted at the College, and the Experiment Station library forms a valuable adjunct to the regular College library by furnishing the results of valuable tests made along agricultural lines in other States. The library also receives the leading agricultural periodicals, which are available to students.

The studies in the course in Agriculture are divided into five groups: Group A gives prominence to work in soils, farm management, machinery, crops; Group B, to work in horticultural subjects; Group C, to work pertaining to live stock interests; Group D, to dairy farming and creamery management. Group E, to Agricultural Engineering. Group E is announced, subject to favorable action by the Board of Directors.

The choice of the five groups must be made at the beginning of the Junior year. In the Senior year options are offered as shown in the curricula following. The elective subject in each option must be selected under the direction of the head of the department in which the option is taken, and registered with the Dean of the College. In each case the practice must conform to theory. A student who elects language in the Junior year must continue the same language in the Senior year.

In the School of Agriculture is also offered a two-year course, leading to a certificate, and a graduate course, leading to the degree of Master of Science (in Agriculture).

I.—COURSE IN AGRICULTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Biology 1 Zoology.	3	Biology 1 Zoology.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
History 1 English.	3	History 1 English.	3
Mathematics 11 Plane Geometry.	3	Mathematics 11 Plane Geometry.	3
Physics 1 General.	3	Physics 1 General.	3
		Dairy Husbandry 1 Milk Testing.	2
	15		17
Agronomy 1	2	*Animal Husbandry* 2	4
Animal Husbandry 1	4	*Dairy Husbandry* 1	2
Biology 1	2	*Biology* 1	2
Drawing 3	2	*Drawing* 31	2
Mechanical Engineering 13*a*	4	*Physics* 1	2
Physics 1	2		
	16		12

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 2a Soils.	2	Agronomy 2a Soils.	2
Biology 2 Botany.	3	Biology 2 Botany.	2
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
English 2 Literature.	2	English 2 Literature.	2
Horticulture 1a Plant Propagation.	2	Horticulture 2 Vegetable Gardening.	3
Military Science 1	2	Animal Husbandry 3 Judging Breeding Types.	2
Physics 2 General.	2	Animal Husbandry 4 Poultry.	1
Veterinary Science 1 Anatomy and Physiology.	2		
	18		15
Agronomy 2*a*	2	*Agronomy* 2*a*	2
Biology 2	2	*Biology* 2	2
Chemistry 1*a*	2	*Chemistry* 1*a*	2
Horticulture 1*a*	2	*Horticulture* 2	2
Physics 2	2	*Animal Husbandry* 3	4
Veterinary Science 1	2	*Animal Husbandry* 4	2
	12		14

GROUP A.—AGRONOMY.

JUNIOR YEAR.

Required.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3 Farm Crops.	3	Agronomy 3 Farm Crops.	3
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
English 4 Advanced Composition.	3	English 4 Advanced Composition.	3
Entomology 1 Systematic.	2	Entomology 2 Economic.	2
Veterinary Science 2 Pharmacology.	2	Veterinary Science 3 Non-infectious Diseases.	2
	13		13
Agronomy 3	2	*Agronomy* 3	2
Entomology 1	2	*Agronomy* 11	2
Chemistry 3	4	*Entomology* 2	2
Veterinary Science 2	2	*Chemistry* 3	2
		Veterinary Science 3	2
	10		10

Elective.

One of the following:

Agricultural Education 1 Psychology.	3	Agricultural Education 2 Vocational.	3
Agronomy 4 Irrigation.	2	Biology 3 Rural Hygiene.	2
Biology 3 Rural Hygiene.	2	Chemistry 4a Organic.	2
Chemistry 4a Organic.	2	Civil Engineering 2 Surveying, Leveling.	3
Language	3	Language	3
Agronomy 4	2	*Biology* 3	2
Biology 3	2	*Chemistry* 4a	2
Chemistry 4a	2	*Civil Engineering* 2	4

SENIOR YEAR.

Required.

Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Economics 3, Economic Organization. *or* Language	3	Economics 3, Economic Organization. *or* Language	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
		Textile Engineering 5 Cotton Classing.	1
		Military Science 2	1
	7		9
Agronomy 6	2	*Agronomy* 6	2

Option 1.—Agronomy.

First Term.	Hours per week	Second Term.	Hours per week.
Agronomy 5 Adv. Soils.	2	Agronomy 8 Plant Breeding.	2
Agronomy 7 Farm Powers.	2	Agronomy 9 Farm Machinery.	2
Agronomy 8 Plant Breeding.	2	Agronomy 10 Crop Ecology.	2
Biology 4 Plant Diseases.	3	Biology 4 Plant Diseases.	3
	9		9
Agronomy 5	2	*Agronomy* 8	2
Agronomy 7	2	*Agronomy* 9	2
Agronomy 8	2	*Agronomy* 10	2
Biology 4	2	*Biology* 4	2
	8		8

Option 2.—Agricultural Chemistry.

Chemistry 6 Advanced Agr. Analysis.	2	Chemistry 6 Advanced Agr. Analysis.	2
Chemistry 7 Physical Chemistry.	2	Chemistry 8 Advanced Agricultural.	2
Elective	3	Elective	3
	7		7
Chemistry 6	6	*Chemistry* 6	6
Chemistry 7	4	*Chemistry* 8	4
Elective	2	*Elective*	2
	12		12

Option 3.—Agricultural Botany.

Biology 5 Plant Physiology.	2	Biology 5 Plant Physiology.	2
Biology 6 Bacteriology.	2	Biology 6 Bacteriology.	2
Elective	3	Elective	3
	7		7
Biology 5	4	*Biology* 5	4
Biology 6	6	*Biology* 6	6
Elective	2	*Elective*	2
	12		12

Option 4.—Agricultural Education.

Agricultural Education 3 School Administration.	3	Agricultural Education 5 High School Problems.	3
Agricultural Education 4 Methods.	3	Agricultural Education 6 High School Agriculture.	3
Agronomy 5 Adv. Soils.	2	Agronomy 9 Farm Machinery.	2
Elective	2	Elective	2
	10		10
Agronomy 5	2	*Agronomy* 9	2
Elective	2	*Elective*	2
	4		4

Option 5.—Farm Management and Marketing.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 12 Marketing Problems.	3	Agronomy 12 Marketing Problems.	3
Agronomy 13 Cost Accounting.	2	Agronomy 14 Advanced Farm Management.	1
Agronomy 5 Advanced Soils.	2	Agricultural Engineering 12 Repairing.	1
Elective	2	Elective	2
	9		7
Agronomy 12	2	*Agronomy* 12	2
Agronomy 13	2	*Agronomy* 14	4
Agronomy 5	2	*Agricultural Engineering* 12	4
Elective	2	*Elective*	2
	8		12

GROUP B.—HORTICULTURE.

JUNIOR YEAR.

Required.

First Term.	Hours per week	Second Term.	Hours per week.
English 4 Advanced Composition.	3	English 4 Advanced Composition.	3
Entomology 1 Systematic.	2	Entomology 2 Economic.	2
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
Horticulture 3 Tree and Vine Fruits.	3	Horticulture 4 Plant Breeding.	2
Veterinary Science 2 Pharmacology.	2	Horticulture 5 Spraying.	1
or Agronomy 3 Farm Crops.	3	Horticulture 6 Nut Culture.	2
	13 *or* 14		13

Chemistry 3	4	*Chemistry* 3	2
Entomology 1	2	*Entomology* 2	2
Horticulture 3	2	*Horticulture* 4	2
Veterinary Science 2 *or* *Agronomy* 3	2	*Horticulture* 5	2
		Horticulture 6	2
	10		10

Elective.

One of the Following:

Agricultural Education 1 Psychology.	3	Agricultural Education 2 Vocational.	3
Agronomy 4 Irrigation.	2	Biology 3 Rural Hygiene.	2
Biology 3 Rural Hygiene.	2	Chemistry 4a Organic.	2
Chemistry 4a Organic.	2	Civil Engineering 2 Surveying, Leveling.	3
Language	3	Horticulture 12 Landscape Art.	2
		Language	3

Agronomy 4	2	*Biology* 3	2
Biology 3	2	*Chemistry* 4a	2
Chemistry 4a	2	*Civil Engineering* 2	4
		Horticulture 12	2

SENIOR YEAR.

Required.

Language *or* Economics 3 Economic Organization.	3	Language *or* Economics 3 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Horticulture 7 Pomology.	3	Horticulture 9 Experimental.	2
		Textile Engineering 5 Cotton Classing.	1
		Military Science 2	1
	7		8
Horticulture 7	2	*Horticulture* 9	2

Option 1.—Horticulture.

First Term.	Hours per week.	Second Term.	Hours per week.
Biology 4 Plant Diseases.	3	Biology 4 Plant Diseases.	3
Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Entomology 3 Fruit Insects.	2	Horticulture 10 Citrus Fruits.	2
Horticulture 8 Forestry.	2	Horticulture 11 Floriculture, Landscape Gardening.	2
	10		10
Agronomy 6	2	*Agronomy* 6	2
Biology 4	2	*Biology* 4	2
Entomology 3	2	*Horticulture* 10	2
Horticulture 8	2	*Horticulture* 11	2
	8		8

Option 2.—Agriculture Chemistry.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 6 Advanced Agr. Analysis.	2	Chemistry 6 Advanced Agr. Analysis.	2
Chemistry 7 Physical Chemistry.	2	Chemistry 8 Advanced Agricultural.	2
Elective	3	Elective	3
	7		7
Chemistry 6	6	*Chemistry* 6	6
Chemistry 7	4	*Chemistry* 8	4
Elective	2	*Elective*	2
	12		12

Option 3.—Agricultural Botany.

First Term.	Hours per week.	Second Term.	Hours per week.
Biology 5 Plant Physiology.	2	Biology 5 Plant Physiology.	2
Biology 6 Bacteriology.	2	Biology 6 Bacteriology.	2
Elective	3	Elective	3
	7		7
Biology 5	4	*Biology* 5	4
Biology 6	6	*Biology* 6	6
Elective	2	*Elective*	2
	12		12

Option 4.—Agricultural Education.

First Term.	Hours per week.	Second Term.	Hours per week.
Agricultural Education 3 School Administration.	3	Agricultural Education 5 High School Problems.	3
Agricultural Education 4 Methods.	3	Agricultural Education 6 High School Agriculture.	3
Horticulture 8 Elem. Forestry.	2	Horticulture 11 Floriculture.	2
Elective	2	Elective	2
	10		10
Horticulture 8	2	*Horticulture* 11	2
Elective	2	*Elective*	2
	4		4

Option 5.—Landscape Art.

First Term.	Hours per week	Second Term.	Hours per week.
Horticulture 13 Landscape Design.	3	Horticulture 13 Landscape Design.	3
Horticulture 14 Hist. of Land. Des.	2	Horticulture 11a Floriculture.	2
Horticulture 8 Forestry.	2	Horticulture 16 Ornamentals.	2
Elective	3	Elective	3
	10		10
Horticulture 13	4	*Horticulture* 13	4
Horticulture 8	2	*Horticulture* 11*a*	2
Elective	2	*Elective*	2
	8		8

Option 6.—Forestry.

Horticulture 8 General Forestry.	2	Horticulture 17 Sylviculture.	3
Horticulture 17 Sylviculture.	3	Horticulture 19 Forest Mensuration.	2
Horticulture 18 Farm Forestry.	2	Horticulture 20 Wood Preservation.	2
Elective	3	Elective	3
	10		10
Horticulture 8	2	*Horticulture* 17	2
Horticulture 17	2	*Horticulture* 18	2
Horticulture 18	2	*Horticulture* 19	2
Elective	2	*Elective*	2
	8		8

GROUP C.—ANIMAL HUSBANDRY.

JUNIOR YEAR.

Required.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3 Farm Crops.	3	Agronomy 3 Farm Crops.	3
Animal Husbandry 5 Breeding.	2	Animal Husbandry 5 Breeding.	2
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
English 4 Advanced Composition.	3	English 4 Advanced Composition.	3
Veterinary Science 2 Pharmacology.	2	Veterinary Science 3 Non-infectious Diseases.	2
		Veterinary Science 4 Obstetrics.	2
	13		15
Agronomy 3	2	*Agronomy* 3	2
Animal Husbandry 5	2	*Animal Husbandry* 5	2
Chemistry 3	4	*Chemistry* 3	2
Veterinary Science 2	2	*Veterinary Science* 3	2
		Veterinary Science 4	2
	10		10

Elective.

One of the Following:

Agricultural Education 1 Psychology.	3	Agricultural Education 2 Vocational.	3
Biology 3 Rural Hygiene.	2	Biology 3 Rural Hygiene.	2
Chemistry 4a Organic.	2	Chemistry 4a Organic.	2
Entomology 1 Systematic.	2	Entomology 2 Economic.	2
Language	3	Language	3
Biology 3	2	*Biology* 3	2
Chemistry 4a	2	*Chemistry* 4a	2
Entomology 1	2	*Entomology* 2	2

SENIOR YEAR.

Required.*

Animal Husbandry 7 Feeding.	3	Animal Husbandry 7 Feeding.	3
Economics 3 Economic Organization. *or* Language	3	Economics Economic Organization. *or* Language	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
		Veterinary Science 5 Infectious Diseases.	2
		Military Science 2	1
	7		10
Animal Husbandry 7	2	*Animal Husbandry* 7	2

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*In addition to the required subjects the student may take Textile Engineering 5 (Cotton Classing), 1 hour a week in the Second Term.

Option 1.—Animal Husbandry.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Agronomy 7 Farm Powers.	2	Agronomy 9 Farm Machinery.	2
Animal Husbandry 8 Advanced Judging.	1	Animal Husbandry 9 Live Stock Management.	2
Elective	2		
	8		7
Agronomy 6	2	*Agronomy* 6	2
Agronomy 7	2	*Agronomy* 9	2
Animal Husbandry 8	4	*Animal Husbandry* 9	2
Elective	2		
	10		6

Option 2.—Agricultural Chemistry.

Chemistry 6 Advanced Agr. Analysis.	2	Chemistry 6 Advanced Agr. Analysis.	2
Chemistry 7 Physical Chemistry.	2	Chemistry 8 Advanced Agricultural.	2
Elective	3		
	7		4
Chemistry 6	6	*Chemistry* 6	6
Chemistry 7	4	*Chemistry* 8	4
Elective	2		
	12		10

Option 3.—Veterinary Science.

Veterinary Science 6 Anatomy.	3	Veterinary Science 6 Anatomy.	3
Veterinary Science 7 Adv. Lab. Methods.	3	Veterinary Science 7 Adv. Lab. Methods.	3
Elective	3		
	9		6
Veterinary Science 6	6	*Veterinary Science* 6	6
Elective	4		
	10		6

Option 4.—Agricultural Education.

Agricultural Education 3 School Administration.	3	Agricultural Education 5 High School Problems.	3
Agricultural Edubation 4 Methods.	3	Agricultural Education 6 High School Agriculture.	3
Animal Husbandry 8 Adv. Judging.	1	Animal Husbandry 9 Live Stock Management.	2
Elective	2		
	9		8
Animal Husbandry 8	4	*Animal Husbandry* 9	2
Elective	2		
	6		2

Option 5.—Poultry Husbandry.

First Term.	Hours per week	Second Term.	Hours per week.
Animal Husbandry 10 Poultry Judging.	2	Animal Husbandry 11 Poultry Feeding and Management.	2
Animal Husbandry 11 Poultry Feeding and Management.	2	Animal Husbandry 13 Incubation and Brooding.	1
Animal Husbandry 8 Advanced Judging.	1	Animal Husbandry 9 Live Stock Management.	2
Elective	2		
	7		5
Animal Husbandry 10	2	*Animal Husbandry* 11	2
Animal Husbandry 11	2	*Animal Husbandry* 13	4
Animal Husbandry 9	4	*Animal Husbandry* 9	2
Elective	2		
	10		8

GROUP D.—DAIRY HUSBANDRY.

JUNIOR YEAR.

Required.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3 Farm Crops.	3	Agronomy 3 Farm Crops.	3
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
Chemistry 4a Organic.	2	Chemistry 4a Organic.	2
English 4 Advanced Composition.	3	English 4 Advanced Composition.	3
Dairy Husbandry 2 Dairy Machinery.	3	Dairy Husbandry 3 Butter Making.	2
		Veterinary Science 4 Obstetrics.	2
	14		15
Agronomy 3	2	*Agronomy 3*	2
Chemistry 3	4	*Chemistry 3*	2
Chemistry 4a	2	*Chemistry 4a*	2
Dairy Husbandry 2	4	*Dairy Husbandry 3*	2
		Veterinary Science 4	2
	12		10

Elective.

One of the following:

Agricultural Education 1 Psychology.	3	Agricultural Education 2 Vocational.	3
Language	3	Language	3
Veterinary Science 2 Pharmacology.	2	Veterinary Science 3 Non-infectious Diseases.	2
Veterinary Science 2	2	*Veterinary Science 3*	2

SENIOR YEAR.

Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Animal Husbandry 6 Breeding and Feeding.	3	Chemistry 9 Dairy.	2
Biology 7 Dairy Bacteriology.	2	Biology 7 Dairy Bacteriology.	2
Dairy Husbandry 4 Creamery Management.]	3	Dairy Husbandry 5 Ice Cream Making.	3
Economics 3 Economic Organization. *or* Language	3	Economics 3 Economic Organization. *or* Language	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
		Veterinary Science 5 Infectious Diseases.	2
		Military Science 2	1
	15		17
Agronomy 6	2	*Agronomy 6*	2
Animal Husbandry 6	2	*Chemistry 9*	6
Biology 7	4	*Biology 7*	4
Dairy Husbandry 4	2	*Dairy Husbandry 5*	2
	10		14

GROUP E.—AGRICULTURAL ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week	Second Term.	Hours per week.
Agronomy 3 Farm Crops.	3	Agronomy 3 Farm Crops.	3
Chemistry 2 Agricultural.	3	Chemistry 2 Agricultural.	3
Language *or* English 4 Advanced Composition.	3	Language *or* English 4 Advanced Composition.	3
Agr. Engineering 1 Farm Surveying.	2	Agr. Engineering 4 Irrigation.	2
Agr. Engineering 2 Farm Machinery.	2	Agr. Engineering 5 Drainage.	2
Agr. Engineering 3 Farm Buildings.	2	Agr. Engineering 6 Gas Engines.	2
	15		15
Agronomy 3	2	*Agronomy 3*	2
Chemistry 3	4	*Chemistry 3*	2
Agr. Engineering 1	4	*Agr. Engineering 4*	2
Agr. Engineering 2	2	*Agr. Edgineering 5*	2
Agr. Engineering 3	2	*Agr. Engineering 6*	4
	14		12

SENIOR YEAR.

Agronomy 6 Farm Management.	3	Agronomy 6 Farm Management.	3
Economics 3 Economic Organization.	3	Economics 3 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Agr. Engineering 7 Farm Tractors.	1	Agr. Engineering 10 Farm Tractor Problems.	1
Agr. Engineering 8 Concrete on the Farm.	1	Agr. Engineering 11 Automobiles.	2
Agr. Engineering 9 Powers and Pumps.	2	Agr. Engineering 12 Repairing Farm Machinery.	1
Elective	2	Military Science 2	1
		Elective	2
	13		14
Agronomy 6	2	*Agronomy 6*	2
Agr. Engineering 7	4	*Agr. Engineering 10*	4
Agr. Engineering 8	4	*Agr. Engineering 11*	2
Agr. Engineering 9	2	*Agr. Engineering 12*	4
Elective	2	*Elective*	2
	14		14

GRADUATE COURSE IN AGRICULTURE.

Graduate studies in the Agricultural Course lead to the degree of Master of Science (in Agriculture). It is required for admission to this course that the candidate be a graduate of this College, or of some other institution approved by the Faculty.

The candidate must register with the Dean of the College, and must take the equivalent of 12 hours theory and 18 hours practice a week for one year in two or three of the following departments: Agronomy, Animal Husbandry, Biology, Chemistry, Entomology, Horticulture, Veterinary Science; this course of study to be approved by a committee consisting of the Dean of the College and the heads of departments concerned. Unless he has credit in organic chemistry, he must take it as a part of this course.

He must present as a part of this work a thesis satisfactory to the committee. The thesis must be typewritten on paper 8½x11 inches.

In addition to the fees regularly charged, he must pay to the Treasurere a fee of two dollars to cover the cost of binding his thesis.

TWO-YEAR COURSE IN AGRICULTURE.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year course in Agriculture, the candidate must be at least sixteen years of age and must be able to pass entrance examinations in English grammar and composition and in algebra to simultaneous equations of the first degree, or must present satisfactory certificate of proficiency in these subjects.

PLAN OF COURSE.

The two-year course in Agriculture is intended for young men who wish to spend one or two years in preparing to go back to the farm and apply successfully all the more important scientific methods of farming which have been worked out in recent years. To this end the course is made highly practical and technical, including in abbreviated form most of the technical work required in the four-year course. Students who have satisfactorily completed the work of this course and have had approved farm experience will be given a certificate showing the work done.

TWO-YEAR COURSE IN AGRICULTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FIRST YEAR.

First Term.	Hours per week.
Agronomy 15 Soils.	3
Biology 15 Zoology.	3
English 9 Grammar, Composition.	3
Horticulture 15 Plant Culture and Propagation.	3
	12
Agronomy 15	2
Agronomy 16	2
Animal Husbandry 15	6
Biology 15	2
Horticulture 15	2
Textile Engineering 17	2
	16

Second Term.	Hours per week.
Agronomy 16 Crop Production.	3
Biology 16 Botany.	3
English 9 Grammar, Composition.	3
Horticulture 2 Vegetable Gardening.	3
Animal Husbandry 16 Judging Breed Types.	2
	14
Agronomy 16	4
Animal Husbandry 16	2
Biology 16	2
Horticulture 2	2
Dairy Husbandry 1*a*	4
	14

SECOND YEAR.

First Term.	Hours per week.
Agronomy 17 Agricultural Engineering.	2
Chemistry 20 Practical.	3
Dairy Husbandry 16 Farm Dairying.	3
English 10 Composition.	3
Horticulture 3 Tree and Vine Fruits.	3
	14
Agronomy 17	4
Chemistry 20	2
Dairy Husbandry 16	4
Horticulture 3	2
	12

Second Term.	Hours per week.
Agronomy 18 Farm Eqpt. and Management.	3
Animal Husbandry 17 Breeding.	1
Animal Husbandry 18 Feeding.	2
Chemistry 20 Practical.	3
English 10 Composition.	3
Entomology 10 Economic.	2
Veterinary Science 16 Animal Diseases.	3
	17
Agronomy 18	2
Animal Husbandry 17	2
Animal Husbandry 18	2
Chemistry 20	2
Entomology 10	2
Veterinary Science 16	2
	12

DEPARTMENT OF AGRICULTURAL EDUCATION.

PROFESSOR HAYES.

The work of this department is based upon text, lectures, assigned readings and problems. The purpose of the courses is two-fold: professional and general.

The great demand for skilled teachers of agriculture in high schools, normal schools and colleges, should appeal to those who are interested in the teaching profession. The primary purpose of the courses offered in this department is to help the student anticipate and solve the problems of teaching.

The rapidly growing work of extension in all its phases is calling for strong, well trained men, who are able to work with all classes of people and especially with teachers and pupils. The students of the agricultural colleges who return to the farm should become leaders in their communities in everything that makes for the improvement of community life. Little progress can be made in these great undertakings unless the problems of the school are solved. The courses offered in this department will serve to give the students a clearer understanding of the principles involved and will prepare them for leadership in their communities.

Under the laws of Texas, graduates of this College who have completed four "full courses" (equivalent to twenty-four credit hours) in Education will be granted a Permanent State Certificate. Those who have completed one "full course" (equivalent to six credit hours) in Education will be given a First Grade Certificate.

This department is co-operating with numerous high schools and teachers of Agriculture throughout the State and assisting them in the organization of courses of study, the planning of laboratory and field work, and the introduction of extension work in the community. An effort will be made to visit at least once during the year each high school in the State teaching Agriculture. The department offers its services to the teachers and schools of the State.

The courses are as follows:

1. Educational Psychology. Junior. First term, 3 hours a week.

This is a beginning course in Psychology with especial emphasis on its applications to the problems of teaching. Stress will be placed upon instincts, habit formation, memory, attention, and the psychological principles of industrial subjects in the curriculum.

2. Vocational Education. Junior. Second term, 3 hours a week.

This course is a brief study of vocational education in general and of agricultural education in particular. The progress in the movement for industrial, trade, and continuation schools will be traced briefly. The history of agricultural education, its present status, and typical agricultural schools and departments will be studied at greater length.

3. School Administration. Senior. First term, 3 hours a week.

This course deals with the organization and management of State, county, and city school systems; the qualification, duties and relations of school boards, superintendents, principals and teachers; school finances; school architecture and equipment; school curricula; formation, enlargement and consolidation of school districts; certification of teachers; and the interpretation and application of the Texas School Law.

4. Methods of Teaching. Senior. First term, 3 hours a week.

The fundamental principles of the aims and methods of the recitation are considered with their application to the conditions of the high school.

5. High School Problems. Senior. Second term, 3 hours a week.

This course is a study of the relation of the high school to elementary school, college and community; reorganization of curriculum with special attention to vocational subjects; equipment; discipline; daily schedules; records, and high school activities.

6. High School Agriculture. Senior. Second term, 3 hours a week.

This course is a study of the specific problems that confront the teacher of Agriculture in the high school. Among the topics discussed are: the selection of subject matter suited to local conditions; the organization of courses of study; equipment; management of field plots; student agricultural organizations; extension work; and community interest.

Prerequisite, *Agricultural Education* 5.

7. Practice Teaching. Senior. Time and credits to be arranged.

Opportunity is offered to a limited number to get experience in teaching under the direction of a critic teacher. Lesson plans are submitted for approval in advance of the recitation. A conference is held after each recitation for discussion and criticism of the methods of teaching. Experience is given for short periods in several different subjects and classes.

Prerequisite, *Agricultural Education* 5.

DEPARTMENT OF AGRONOMY.

PROFESSOR MORGAN, ASSISTANT PROFESSOR S. A. MCMILLAN, MR. WOOD, MR. GEE, MR. STEWART.

Agronomy comprises the theory and practice of the production of field crops. In this department instruction is given in those subjects which relate especially to the field and its affairs, such as soils, farm crops, seed selection, farm management, plant breeding, irrigation and drainage, farm powers, farm motors, farm machinery, crop ecology, etc.

These subjects are presented by means of lectures, recitations, laboratory exercises, collateral readings, farm excursions, etc. To the equipment and facilities which the department possesses for giving this instruction, is also added the opportunity for contact with the research work of the Experiment Station, especially along the lines of soil fertility and crop production.

The present day farmer must have a knowledge of the fundamental principles underlying soil management and crop production, regardless of the system of farming to be followed, as these are basic. To produce maximum crops and at the same time keep the soil permanently productive, requires both theoretical and practical knowledge. It is the purpose of this department to train the student along both of these lines.

The courses are as follows:

1. Seed Selection. Freshman. First term, 2 hours a week. Practice.

This course gives the student a practical knowledge of the best methods of seed selection with reference to all important field crops. Emphasis is placed upon the importance of field selection as a basis of plant improvement. The student is familiarized with the points that go to constitute an ideal seed plant. The seed itself is also studied and practice work in judging and scoring grain is given.

No text. (Required in Course I.)

2a. Soils. Sophomore. First and second terms, 2 hours a week, with practice.

This course gives the student a rather comprehensive knowledge of the soil and its management. It is given according to the following outline:

(a) The soil as a medium for Root Development, including a study of rock and its products, the soil mass, together with the physical properties of the soil and their modification; the organic contents of the soil.

(b) The soil as a Reservoir for water, including the functions of water in plant growth; the amount of water in the soil; the movement of soil water, and the control of soil water.

(c) Plant Nutrients in the soil, including a careful study of both micro-organisms and macro-organisms, as they influence soil productiveness.

(d) The Soil Air; composition and functions of.

(e) Heat of the Soil; comprising a study of the sources, functions and means of modifying soil temperature.

(f) External factors in soil management; tillage, crop adaptation, etc.

Text: Soils, *Lyon & Fippin.*

Practice, 2 hours a week.

The student, working in the laboratory, applies the principles learned in the class room, to the actual management of soils.

(Required in Course I.)

3. Farm Crops. Junior. First and second terms, 3 hours a week; with practice.

In this course, all the leading field crops are studied with regard to structure, composition, races and varieties, breeding or improvement, soils, rotations, and fertilizers, together with tillage operations, harvesting and marketing.

Texts: Southern Field Crops, *Duggar.*
Forage and Fibre Crops, *Hunt.*

Practice, 2 hours a week.

In the laboratory the student makes a careful study of the leading characteristics of the different crops; seeds are studied as regards purity, and other points that determine value.

(Required in Groups A, C, D; optional in Group B, first term.)

4. Irrigation and Drainage. Junior. First term, 2 hours a week; with practice.

The water requirements of the common crops, duty of water and factors modifying same, the different methods of applying water to land, irrigation reservoirs and ditches, the alkali problem and its control, a brief survey of the water supply of Texas and the principles of economic conservation, and State and national water-right regulations will be studied. Drainage will be studied from the viewpoint of soil physics and soil moisture control. The movement of ground water, tile and open drains will be treated in detail.

Lectures, recitations and individual reports.

(Optional in Groups A, B.)

Texts: Irrigation, *Wilcox.*
Engineering for Land Drainage, *Elliott.*
Station and Government Bulletins and Reports.

Practice, 2 hours a week.

Ditch and dam site surveys, land leveling and the laying of tile drains.

5. Advanced Soils. Senior. First term, 2 hours a week; with practice.

This course is intended for the student who wishes to make a specialty of soil study. It deals especially with systems of soil management with reference to permanent soil productiveness. Recent literature bearing on the subject is discussed and the results of some of the leading soil investigations studied.

Text: Soil Fertility and Permanent Agriculture, *Hopkins.*

Practice, 2 hours a week.

Laboratory studies of soil with special reference to the fertility problem.

(Options 1 and 4, Group A.)

6. Farm Management. Senior. First and second terms, 3 hours a week; with practice.

The application of all the principles taught in the various agricultural subjects to the business management of the farm. Farm problems and farm bookkeeping are featured. Different systems of farming are studied as regards the equipment in land, labor, and capital for each, also crop rotations best suited to the different systems.

Practice, 2 hours a week.

Practice work comprises a field study of available farms, planning and outlining systems of management best adapted to each. Attention is given to the general lay-out of farm, size and shape of fields, condition of buildings, ditches, roadways, etc., and the necessary improvements are suggested.

(Required in Groups A, D: option 1, Groups B, C.)

7. Farm Powers. Senior. First term, 2 hours a week; with practice.

A brief review of the principles of energy, work and power; the simple machines and elementary mechanics; animal power as a prime mover and its application to the operations of the farm; windmills; water wheels; steam engines and boilers, especially the portable types; fuels; gas engines; gas tractors and their use on a farm.

Texts: Farm Machinery and Farm Motors, *Davidson & Chase.*
The Gas Engine Handbook, *Roberts.*

Practice, 2 hours a week.

Laboratory and field studies in farm mechanics. Comparisons of the power required to operate the various farm implements; a study of the gas engine and its parts; the practical operation of gas engines and the more common difficulties encountered in their use will occupy a most important place in the practice.

(Option 1, Groups A, C.)

8. Plant Breeding. Senior. First and second terms, 2 hours a week; with practice.

A course dealing with the improvement of field crops. The methods of breeding applicable to each crop are discussed in detail. The relative merits of selecting fluctuating variations, selecting mutations, and the isolation of elementary species, are given special consideration.

Largely a lecture course.

Practice, 2 hours a week.

Students will study the different forms of variation in the field and laboratory and will have practice work in making selections relative to plant improvement.

(Option 1, Group A.)

9. Farm Machinery. Senior. Second term, 2 hours a week; with practice.

A history of development of agricultural machinery in America; detailed studies of the principal appliances used in the tillage, seeding, cultivation and harvesting of field crops; points to be observed in the selection of farm machinery for any given purpose, will be stressed in class.

Lectures, recitations and reports.

Texts: Farm Machinery and Farm Motors, *Davidson & Chase.*

Practice, 2 hours a week.

As many of the types of machines studied in class as are available will be taken apart, reassembled and operated in the field. Calibration of planters and seeders will receive attention. A portion of the time will be devoted to the practical use of concrete for farm structures.

(Option 1, Groups A, C.)

10. Crop Ecology. Senior. Second term, 2 hours a week; with practice.

A course dealing with the effect of such climatic factors as temperature, rainfall, atmosphere, humidity, etc., upon the yield; and the physical and chemical development of our ordinary field crops.

Students will make a careful study of crops and grain grown under varying climatic conditions; familiarizing themselves with such modifications as have been produced as a result of the different conditions.

(Option 1, Group A.)

11. Soil Mapping. Junior. Second term, 2 hours a week. Practice.

A detailed study of soil types accompanied by field work and soil maps. Prerequisite, *Agronomy* 2a.

12. Marketing Problems. Senior. First and second terms, 3 hours a week with practice.

This course deals with special problems pertaining to the marketing of all forms of farm products. Some of the factors considered are the ease, cost and methods of marketing different products; the cost of holding products; the relative price of products in different months, and the relation of co-operation to the solution of marketing problems.

Practice, 2 hours a week.

Practice consists of a farm marketing seminar in which certain phases of the work are taken up for special consideration. The instructor will lead in the discussion or designate a student as leader.

(Option 5, Group A.)

13. Cost Accounting. Senior. First term, 2 hours a week; with practice.

In this course special attention is given to farm inventories, work reports, animal records, milk records, egg records, crop reports, and general methods of cost accounting as they apply to the different farm enterprises.

Practice, 2 hours a week.

Practice work will comprise the preparation of the various kinds of work, crop and animal records and the preparation of complete sets of cost accounts.

(Option 5, Group A.)

14. Advanced Farm Management. Senior. Second term, 1 hour a week; with practice.

Comprises a discussion of efficiency factors on farms, with special reference to the farms visited in practice.

Practice, 4 hours a week.

Practice work comprises field trips to study neighboring farms from the standpoint of organization, equipment and management for general efficiency.

(Option 5, Group A.)

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

15. Soils and Soil Management. First term, 3 hours a week; with practice.

A study of the origin, composition, structure, texture and crop adaptations of agricultural soils. Soil fertility and its maintenance; manures, fertilizers, cover crops, fallowing, fall and spring plowing, crop rotations, diversification and the renovation of worn-out soils will receive attention in the proper order. This course is designed to meet the more practical needs of the two-year student.

Recitations and lectures.

Texts: Soils, *Fletcher.*
Farm Manures and Fertilizers, *Brooks.*

Practice, 2 hours a week.

Laboratory and field studies on the water-holding capacity of soils, capillarity, the influence of organic matter on the physical properties, and lime and its effects.

16. Crop Production. Second term, 3 hours a week; with practice.

Beginning with laboratory instruction on the use of the score card and the judging of corn and cotton, this course will include a thorough treatment of all the principal grain, forage and fibre crops grown on the farms of this State. The best methods for the planting, tilling, harvesting and storing of the crops will be taught. The principal diseases and insect enemies will receive careful attention.

Recitations and lectures.

Texts: Southern Field Crops, *Duggar.*
Forage and Fibre Crops, *Hunt.*

Practice, first term 2 hours; second term, 4 hours a week.

Laboratory and field practice in the selection of seed for the various crops studied; seed testing; plot studies of the plants of the field.

Second Year.

17. Agricultural Engineering. First term, 2 hours a week; with practice.

A general course in irrigation, drainage, farm powers, farm machinery and practical cement construction. The limited time allowed for this course will permit only an abbreviated treatment of each subject, but the fundamental principles and facts will be presented.

Practice, 4 hours a week.

Field work with level and rod; surveys of irrigation and drainage ditches; simple dams and reservoirs; the operating of gas engines; laboratory and field practice with tillage, seeding and harvesting implements; concrete and cement mixing; concrete posts, floors and tanks.

18. Farm Equipment and Management. Second term, 3 hours a week; with practice.

A comprehensive study of the farm from an economic and business standpoint. Such topics as the planning and organizing of the farm with respect to available resources; farm labor; wages; rents and lease systems; contracts; farm accounts; farm advertising and salesmanship; efficiency; and the principal rural problems will be studied.

Practice, 2 hours a week.

Students will be required to work out a problem consisting of the planning, equipping and managing of a given farm on an ideal plan for a period of several years. Excursions to representative farms, and agricultural surveys will be undertaken as opportunity may permit.

DEPARTMENT OF ANIMAL HUSBANDRY.

PROFESSOR BURNS, MR. KENNEDY, MR. BELL, MR. BURK.

The courses in the Department of Animal Husbandry may be grouped under the four main heads:

(1) The Judging of Live Stock.
(2) The Breeding of Live Stock.
(3) The Feeding of Live Stock.
(4) The Management of Live Stock.

These are arranged to follow each other in proper order so that they may be best understood by the student, and most clearly taught by the instructor. Every effort is made to make every course in Animal Husbandry contribute to the better understanding of the others, and all unite in embracing the subject completely. Special efforts are made in every course to present the useful side, and also to devote as much time as possible to the practices. The courses are designed to give the student a thorough understanding of the live stock business in all its phases and to better fit him for work in this line, whether it be stock farming, ranching, teaching or investigation. Students intending to specialize in Animal Husbandry are required to take the studies under Group C.

The courses are as follows:

1. Judging Market Types of Cattle and Sheep. Freshman. First term, 4 hours a week. Practice.

The lectures are explanatory of the various classes and grades of cattle and sheep recognized in the leading stock markets. The points of these and their value to stockmen, butcher and consumer are fully discussed. The practice embraces a thorough training in the scoring of fat cattle and fat sheep; supplemented by the study of dressed carcasses as far as possible. In this course lectures are also given on the type and function of the dairy cow and thorough training is given in the scoring of dairy cattle. Comparative judging constitutes an important part of the work.

Text: Judging Live Stock, *Craig.*

(Required in Course I.)

2. Judging Market Types of Horses and Swine. Freshman. Second term, 4 hours a week. Practice.

The classes and grades of horses and swine recognized in the leading markets are discussed fully. The distinction of classes, and their importance, is made clear by the further use of the score card. Comparative judging is also an important feature in this course.

(Required in Course I.)

3. Judging Breed Types of Horses, Cattle, Sheep and Swine. Sophomore. Second term, 2 hours a week; with practice.

The lectures in this course treat of the origin, history, characteristics and adaptability of the various breeds of live stock. As far as the equipment in live stock will permit, the student is shown by means of representative animals the best type of the breeds of horses, cattle, sheep and swine.

Text: Types and Breeds of Farm Animals, *Plumb*.

Practice, 4 hours a week.

The score cards of the different breed associations are used in determining the merits of the animals and these are further explained in the lectures. An important part of the practice consists of comparative judging similar to that of the show ring.

Prerequisite, *Animal Husbandry*, 1, 2.

(Required in Course I.)

4. Poultry Judging and Management. Sophomore. Second term, 1 hour a week; with practice.

Lectures are given on the origin, history and classification of the various breeds of poultry. A thorough study is made of poultry feeding and breeding. Houses, yards, diseases, incubation, brooding and marketing of poultry products receive careful consideration. The interests of both the fancier and of the producer of market poultry are kept in mind.

Practice, 2 hours a week.

Instruction is given in scoring market types and breeds of poultry, and when the student has attained proficiency in this, comparative judging is introduced. Some practice periods are devoted to studying the anatomy of birds; and some to studying incubators and brooders.

(Required in Course I.)

5. The Breeding of Live Stock and the Study of Pedigrees. Junior. First and second terms, 2 hours a week; with practice.

The lectures of this course embrace a presentation of the principles and methods of breeding, involving a further study of the origin, history and characteristics of the breeds of live stock. Heredity and variation, and allied topics are included in the lectures on the principles, while the subjects of inbreeding, line breeding, and balanced breeding are among those relating to the methods of breeding. The practices of breeding live stock are treated fully, including the business of producing purebred stock, as well as those for the common market.

Text: Breeding Farm Animals, *Marshall*.

Practice, 2 hours a week.

During the practice periods the study of pedigrees is given especial attention. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite, *Animal Husbandry* 3.

(Required in Group C.)

6. The Breeding and the Feeding of Dairy Cattle. Senior. First term, 3 hours a week; with practice.

This course is designed especially for students specializing in Dairy Husbandry. The lectures on breeding treat of the principles and methods of breeding with special reference to dairy cattle. The business of breeding dairy cattle is fully discussed. The lectures on feeding cover the principles of animal nutrition and treat specifically the feeding of dairy cattle.

Practice, 2 hours a week.

A part of the practice work will consist of a study of the pedigrees of some of the more noted animals of each of the dairy breeds in order that the student may become familiar with the best blood lines. The practice in feeding will consist largely of calculating rations for dairy cows, special attention being given to a study of Texas grown feeding stuffs and their value for milk production.

Prerequisite, *Animal Husbandry* 3.

(Required in Group D.)

7. The Feeding of Live Stock. Senior. First and second terms, 3 hours a week; with practice.

The subject of animal nutrition, the composition of available feeding stuffs, and the calculating of rations are treated fully. The course embraces a thorough study of the feeding of all classes of farm animals, horses, cattle, sheep and swine.

Texts: Profitable Stock Feeding, *Smith.*
Feeds and Feeding, *Henry.*

Practice, 2 hours a week.

The practice consists in part of the making of rations for different classes of stock from limited selections of feeding stuffs. The student is required to make abstracts of Experiment Station bulletins, and to keep fully informed as to the latest publications relating to the subject of feeding.

(Required in Group C.)

8. Advanced Judging. Senior. First term, 1 hour a week; with practice.

The lectures of this course treat further of the most approved types of pure-bred animals and of those used for the common market.

Practice, 4 hours a week.

The work of competitive judging is given prominence. Classes of the different kinds of live stock are selected as similar as possible to those which came together in the show rings of exhibitions.

Prerequisite, *Animal Husbandry* 3.

(Options 1, 4, Group C.)

9. Live Stock Management. Senior. Second term, 2 hours a week; with practice.

The raising of horses, cattle, sheep, and swine, as a business, is discussed in full detail, covering all features of management in production and marketing. The management of stock farms and ranches is fully treated. A study is made of the methods used by some of the most successful stock farmers and ranchers of Texas and other States. Special attention is given to the management of pure-bred herds and flocks and to the keeping of private herd and flock records.

Practice, 2 hours a week.

The practice in live stock management consists of actual work in preparing different classes of stock for show and sale. The student is given instruction in trimming sheep, washing and curling the coats of cattle and polishing horns and hoofs. The work on horses consists of grooming, fitting of harness and decoration of manes and tails. Practice in filling out registration blanks for pure-bred stock, and the use of transfer blanks is also given.

Prerequisite, *Animal Husbandry* 5, 7.

(Options 1, 4, Group C.)

10. Poultry Judging. Senior. First term, 2 hours a week; with practice.

This course includes a study of the origin, history and classification of the various breeds and varieties of poultry, and the scoring and judging of the most important varieties in accordance with the American Standard of Perfection.

Text: American Standard of Perfection.

Practice, 2 hours a week.

Practice will be given in the study of feather markings, and in the judging of birds under show yard conditions, both by means of the score card and comparison.

11. Poultry Feeding and Management. Senior. First and second terms, 2 hours a week; with practice.

This course includes a study of poultry houses, arrangement of buildings and yards, feeds and feeding, poultry diseases, caponizing, killing, dressing and marketing of poultry products.

Practice, 2 hours a week.

The student will be given charge of a pen of fowls and will be required to keep a record of the amount and cost of food consumed, gains made and eggs produced, and to calculate the profit or loss. This work will cover periods of 3 weeks and the student must be present morning, noon and afternoon, the time to be arranged by appointment with the Instructor.

12. Incubation and Brooding. Senior, 1 hour a week; with practice.

Lectures will be given in regard to the principles involved and the methods pursued in incubation and brooding of chickens.

Practice, 4 hours a week.

Each student will be given charge of one or more incubators for the period of one hatch and required to keep record of the fuel consumed, temperatures, infertile eggs, dead germs, dead in shells, chickens hatched and total cost of incubation. Each student will also be given charge of chickens in a brooder for 4 weeks from the time of hatching and will be required to keep record of temperature, fuel and food consumed, gains made and mortality and to calculate the total cost of brooding. Students will be required to be present morning, noon and afternoon, the time to be arranged by appointment with the Instructor.

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

15. Judging Market Types of Horses, Cattle, Sheep and Swine. First term, 6 hours a week. Practice.

In this course students are given thorough training in scoring and judging market types of horses, cattle, sheep and swine. The points of these and their value to stockmen, butcher and consumer are fully discussed. A study of dressed carcasses is made.

Text: Judging Live Stock, *Craig.*

16. Judging Breed Types of Horses, Cattle, Sheep and Swine. Second term, 2 hours a week; with practice.

A modification of *Animal Husbandry* 3.

Text: Types and Breeds of Farm Animals, *Plumb.*

Practice, 2 hours a week.

Prerequisite, *Animal Husbandry* 15.

17. The Breeding of Live Stock and the Study of Pedigrees. Second term, 1 hour a week; with practice.

Second Year.

The lectures in this course treat of the principles of breeding and the methods used in the practice of breeding horses, cattle, sheep, and swine,—pure-bred animals, as well as those for the common market.

Text: Breeding Farm Animals, *Marshall.*

Practice, 2 hours a week.

The practice consists principally of the study of pedigrees. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite, *Animal Husbandry* 16.

18. The Feeding of Live Stock. Second term, 2 hours a week; with practice.

This course embraces a study of the feeding of all classes of farm animals, horses, cattle, sheep and swine. The subject of animal nutrition, the composition of available feedstuffs and the calculating of rations, are treated fully.

Text: Elementary Treatise on Stock Feeds and Feeding, *Halligan.*

The practice consists largely of calculating rations for different classes of farm animals, special attention being given to the study of Texas grown feed stuffs.

DEPARTMENT OF BIOLOGY.

PROFESSOR BALL, ASSISTANT PROFESSOR HAYDEN, MR. CASSIDY, MR. REED.

The work of this department is designed to furnish the student with that accurate and thorough knowledge of the structure and functions of plants and of animals which is essential for those who purpose engaging in the arts of agriculture and horticulture.

Instruction is given by lecture and text, but especial emphasis is laid upon the work of the laboratory, where every effort is made to induce in the student habits of independent observation and thought.

The courses are as follows:

1. Zoology. Freshman. First and second terms, 3 hours a week; with practice.

A study of the animal kingdom with especial emphasis upon the physiology of animals is presented in this course. The habits and modes of life are studied and some attention is given to the development of animal life upon the earth. The text is used mainly as a book of reference, the student being encouraged to gain his knowledge from his own observations made in the laboratory and not from accounts in the textbook. Since the animal and plant worlds are closely related in many respects, a foundation is laid in this year for the more advanced study of plants in the Sophomore year.

Text: College Zoology, *Hegner.*

Practice, 2 hours a week.

In the laboratory typical representatives of the various groups of animals are studied. As far as possible economic or commercial forms are chosen, and the chief emphasis is laid on the physiological side of the study.

(Required in Course I.)

2. Botany. Sophomore. First term, 3 hours, second term, 2 hours a week; with practice.

The morphology and systematic relations of plants are studied in this course, which begins with an outline of the external and internal form and structure necessary to the more extended work in the physiology of the plant. The second term is devoted to systematic and ecologic botany in which the student is trained to identify plants, using as a basis his knowledge of their structure, and to apply both structure and function in accounting for their life relationships. Especial attention is given to plants of economic importance.

Texts: College Botany, *Atkinson.*
Flora of the Southern States, *Chapman.*

Practice, 2 hours a week.

The laboratory work is planned to illustrate the lectures, but more especially to train the student to acquire facts of structure and function by direct observation. In order to insure careful and correct interpretation of what is seen, each student is required to keep a notebook in which he records by drawings and notes the results of his work.

(Required in Course I.)

3. Rural Hygiene. Junior. First and second terms, 2 hours a week; with practice.

This course presents an outline of the relation of bacteria to every-day life, at home and on the farm. The rationale of sanitation, personal and general; the construction and operation of sewage disposal plants suitable for use in villages and in the country: the relation of insects, vermin, etc., to the health of man and of animals; sanitary milk and dairy processes, and the general relations of bacteria to soil fertility are carefully considered.

Text: Principles of Hygiene, *Bergey*.

Practice, 2 hours a week. Laboratory study of bacteria and of their activities; methods of disinfection, etc.

(Optional in Groups A, B, C.)

4. Plant Diseases. Senior. First and second terms, 3 hours a week; with practice.

The structure, physiology and classification of fungi are studied in the first term; in the second, types of the most important plant diseases occurring in the State are selected for study and the student is trained to identify the cause of the trouble and is shown the methods of spraying and of other corrective measures. Plant diseases due to other causes receive attention within the limits of time and material.

Text: Fungous Diseases of Plants, *Duggar*.

Practice, 2 hours a week.

In the first term the student will become acquainted with the form and structure of selected fungi, and will learn the routine methods of cultivation, experimentation, etc. In the second term, diseased plants are placed before him, and he is instructed in the diagnosis of each with its appropriate treatment.

(Option 1, Groups, A, B.)

5. Plant Physiology. Senior. First and second terms, 2 hours a week; with practice.

An advanced course in physiology is here offered in which the functions of respiration, assimilation and nutrition receive especial attention. The course is designed for those who wish to pursue work of higher character in the field of general agricultural botany and at the same time to give, in the practical work, an introduction to the methods of research.

Text: Vegetable Physiology, *Green*.

Practice, 4 hours a week.

Laboratory manual, Practical Physiology of Plants, *Darwin & Acton*.

(Option 3, Groups A, B.)

6. **Bacteriology. Senior. First and second terms, 2 hours a week; with practice.**

In this course the general nature and relations of bacteria are considered in the first term, as exhibited by the study of selected types. In the second term the relations of bacteria to agricultural pursuits are examined; their activities in soil-building, dairy processes, various fermentations, such as of foliage, curing and manufacture of farm products, etc.

Text: General Bacteriology, *Jordan.*

Practice, 6 hours a week.

Preparation of culture media, of pure cultures, staining and microscopical technique; methods of identification, etc., occupy the time allotted in the first term. In the second term the student makes analyses of water, milk, sewage, etc., and continues methods of identification of commoner forms.

Manual, Laboratory Bacteriology, *Frost.*

(Option 3, Groups A, B.)

7. **Dairy Bacteriology. Senior. First and second terms, 2 hours a week; with practice.**

This course is designed for students electing work in Dairy Husbandry. In the first term a rapid outline of the general nature and relations of bacteria is given, followed by a study of those forms which are directly related to changes in milk and other dairy products, dairy management and hygiene, etc. Methods of pure culture, analysis of milk, butter, etc., and of control of undesirable forms are studied in the second term.

Text to be selected.

Practice, 4 hours a week. First term, preparation of culture media; technique of dairy bacteriology; identification, etc. Second term, analysis of milk, cream, etc.

Manual, Outlining of Dairy Bacteriology, *Russell & Hastings.*

(Group D.)

8. **Sanitary Water Analysis. Junior. Second term, 1 hour a week; with practice.**

In this course the relations of bacteria to water and water supplies are considered. The latter part of the term will be devoted to the study of sewage and sewage disposal.

Text: Elements of Sanitary Engineering, *Merriman.*

Practice, 4 hours a week. The preparation of culture media; quantitative and qualitative analysis of water and sewage.

Text to be selected.

(Option, Course IV.)

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

15. **Zoology. First term, 3 hours a week; with practice.**

A study of the familiar forms of animal life. The development of animal life, the life-histories of various animals, their habits and especially their relation to man are studied. Their behavior is also noted, as illustrating human physiology.

Text: General Zoology, *Linville & Kelley.*

Practice, 2 hours a week.

The laboratory work consists of the dissection of a few familiar forms. and observations on their behavior and mode of life. As in the Freshman course, the student is urged to depend upon his own observations rather than on the text, and to learn to understand and to be able to describe what he sees.

16. Botany. Second term, 3 hours a week; with practice.

Students in this course are offered work designed to present a clear outline of the fundamental facts of plant life upon which the intelligent handling and care of farm crops are based. The term opens with a study of the plant as a whole and this leads to the systematic and ecologic relationships especially of those used as cultivated crops.

Text: A Practical Course in Botany, *Andrews.*

Practice, 2 hours a week.

The student is required to work out for himself and to make notes upon the structure of the plant and to use this knowledge in the systematic study of selected plants.

GRADUATE COURSES.

Students who have taken preliminary degrees at this institution, or at some other of equivalent rank, or those who may for special reasons desire advanced work in the biological sciences, will be admitted to graduate work in any one or more of the following courses:

In zoology—comparative anatomy and embryology of the vertebrates.

In botany—ecologic study of any family well represented in this vicinity; investigation of an assigned topic in plant physiology; monographic study of a pathogenic or non-pathogenic fungus; methods of research and technique in bacteriology, or research work in agricultural bacteriology, or plant pathology.

In each case, courses of advanced reading will be assigned and a thesis required.

DEPARTMENT OF DAIRY HUSBANDRY.

ACTING PROFESSOR RIDGWAY, MR. CLUTTER, MR. TALBOT.

The courses of study offered in this department are for the purpose of giving special training in the manufacture and handling of dairy products.

These courses may be divided as follows:

(1) The Care and Handling of Milk.
(2) The Manufacturing of Products from Milk.
(3) The Management and Operation of Creameries.

Special importance is given to the laboratory work in connection with these courses, as the necessity of practical training along these lines is fully appreciated. The College creamery, which is run in connection with this department, affords laboratory facilities for working out the practical problems involved in these courses.

1. Milk Testing. Freshman. Second term, 2 hours a week; with practice.

A brief course in the composition of milk and the testing of milk and its products for the percentage of butterfat with special reference to herd testing and record keeping.

Text: Milk and Its Products, *Wing.*

Practice, 2 hours a week.

The estimation of the percentage of butterfat in milk and its products by the Babcock method and the use of the lactometer.

(Required in Course I.)

2. Dairy Machinery and Dairy Buildings. Junior. First term, 3 hours a week; with practice.

Lectures and recitations on the care and handling of dairy machinery and on the construction of creamery and dairy buildings, including the silo.

Practice, 4 hours a week.

All machinery in the College creamery will be studied regarding its cost, installation and operation.

(Required in Group D.)

3. Butter Making. Junior. Second term, 2 hours a week; with practice.

A course dealing with butter-making in the creamery and on the farm, and the marketing and judging of butter.

Practice, 2 hours a week.

(Required in Group D.)

4. Creamery Management. Senior. First term, 3 hours a week; with practice.

Lectures and recitations on the organization and management of creameries, dealing especially with creamery bookkeeping.

Practice, 2 hours a week.

Library work on the creamery organizations and creamery literature.

(Required in Group D.)

5. City Milk Inspection and Ice Cream Making. Senior. Second term, 3 hours a week; with practice.

This course deals first, with the problems of the city milk supply, the methods of producing certified milk and the determination of adulterations or the use of preservatives in milk; and, second, the composition and manufacture of ice cream on a commercial basis.

Practice, 2 hours a week.

Text: Jensen's Milk Hygiene, *Pearson*.

(Required in Group D.)

6. Advanced Dairying. Senior. First and second terms, 2 hours a week; with practice.

Farm butter-making, clean milk production, and ice cream making. An elective course designed especially for students in Group C.

Practice, 2 hours a week.

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

1a. Milk Testing. Second term, 4 hours a week. Practice.

A modification of the practice of course 1. The practice will occasionally be supplemented by a lecture.

Second Year.

16. Farm Dairying. First term, 3 hours a week; with practice.

The use and care of cream separators, the handling of cream, and the manufacture of butter on the farm. Instruction will also be given in the care of dairy cows and the raising of dairy calves.

Practice, 4 hours a week.

DEPARTMENT OF ENTOMOLOGY.

PROFESSOR NEWELL, MR. BILSING.

The courses in Entomology are so arranged as to give the students in Agriculture a practical knowledge of the lives, habits and economic importance of insects. The department is equipped with models showing the external and internal anatomy of various insects, with dissecting tools and miscroscopes, compound microscopes, apparatus for histological work, a collection of insects for reference and a good entomological library for students' use. The department also has a building, 38x46 feet, well equipped with spraying machinery and insecticides for practice work and experiments.

The courses are as follows:

1. Systematic Entomology. Junior. First term, 2 hours a week; with practice.

In this course the student is taught the anatomy and physiology of insects as a basis for the development of practical measures of control. The various Orders of insects are studied, particular attention being given the forms that are decidedly injurious or beneficial. Considerable time is given to the biological aspect of the subject. The student also becomes familiar with entomological literature and with the methods by which insects are identified and classified.

Text: Entomology, Its Biological and Economic Aspects, *Folsom.*

Practice, 2 hours a week.

In the laboratory the student studies both external and internal anatomy of insects, aided by the models and by actual dissection. Drawings are made of insect structures and of specimens typical of the various Orders.

(Required in Course 1, Groups A, B; optional in Group C.)

2. Economic Entomology. Junior. Second term, 2 hours a week; with practice.

This course is the logical continuation of course 1 and is open only to students who have successfully completed that course. The student, having become familiar with insect anatomy and physiology, here takes up the applied aspects of the subject. Special attention is given to the life history of the insects that are injurious to staple crops, fruit and truck crops, live stock, etc., together with measures for their control by means of intelligent farm practice and the use of insecticides. In connection with the practice work the student is required to make a collection of local insects, consisting of at least fifty specimens, all of which must be properly pinned, labeled and correctly named. The importance of parasites and diseases and their utilization is also taught.

Text: Economic Entomology, *Smith.*

Practice, 2 hours a week.

In the practice the student prepares various insecticides for use, learns how to handle spraying machinery and, so far as opportunities permit, tests the effect of various control measures upon injurious insects.

Methods of fumigation for the destruction of insects infesting nursery stock, buildings and stored products are put in practice. Field trips are made to study injurious insects and for observing the effects of cultural methods or climatic conditions upon the destructiveness of insects.

Prerequisite, *Entomology* 1.

(Required in Course 1, Groups A, B; optional in Group C.)

3. Fruit Insects. Senior. Elective. First term, 2 hours a week; with practice.

This course is especially designed for students who are specializing in horticulture and wish more definite information concerning the insect pests of the fruit and truck crops. In this course a detailed study is made of the life history, habits and control of the pests of these crops. Special attention is given to control measures adapted to Texas conditions, and to the value of parasites and orchard management in the practical control of pests.

Text: Insect Pests of Farm, Garden and Orchard, *Sanderson.*

Practice, 2 hours a week.

In the practice the student is taught the identification of scale-insects and other fruit pests of importance. Particular attention is given to those fruit-insects which occur in Texas. Each student is required to make a detailed study of some horticultural pest from available literature, with a view of becoming familiar with all the current information thereon.

Prerequisite, *Entomology* 2.

(Option 1, Group B.)

4. Advanced Entomology. Senior. Elective.

This course is designed for students who elect special work in Entomology and will be outlined according to the needs of each individual student.

TWO-YEAR COURSE IN AGRICULTURE.

Second Year.

10. Economic Entomology. Second term, 2 hours a week; with practice.

A general outline of the classification of insects is here offered, together with a sufficient study of anatomy and biology for the understanding of control measures. Particular attention is given to injurious insects of field, garden and orchard, together with the methods and insecticides by which they may be controlled.

Text: Elementary Entomology, *Sanderson & Jackson.*

Practice, 2 hours a week.

The practice consists of sufficient dissection and study in the laboratory to familiarize the student with the different Orders of insects. This is supplemented by field studies of injurious forms, together with the preparation of various insecticides and their use.

DEPARTMENT OF HORTICULTURE.

PROFESSOR KYLE, ASSISTANT PROFESSOR BLACKMON, ASSISTANT PROFESSOR A. T. POTTS.

The aim of this department is twofold: First, to develop scientific horticulturists; second, to turn out practical fruit and truck growers. This statement does not mean there are two distinct courses, but that when a student finishes the course he is prepared to engage in either the scientific or the practical side of horticulture. The course of study covers somewhat fully the different lines of horticulture and embraces the following subjects: Nursery methods, truck gardening, orchard culture, nut culture, plant breeding, viticulture, spraying, citrus fruits, experimental horticulture, besides work in landscape gardening, floriculture and general forestry. The student is taught these subjects by means of text-books and lectures. In order to develop the practical side of the student, he is given from two to four hours a week in outdoor work, which comprises practice in budding, grafting, pruning, thinning fruit, spraying, setting out orchards and planting vegetables. He is taught how to mix and apply fertilizers, and he is also shown the best methods of cultivating the different horticultural crops. The department now has growing on the College grounds a commercial orchard of peaches, thirty varieties of paper-shell pecans, twenty varieties of grapes, a persimmon, pear and fig orchard, and small fruits consisting of blackberries and dewberries.

Besides the theoretical and practical work given at the College, the student is sent out during the summer to work in the orchards and truck farms of the largest growers, not only in this but in several of the other leading fruit States. Excursions are arranged during the school year for visiting the largest and most successful fruit and truck farms in the State. This not only gives the young man a good knowledge of the horticultural work done in his own State, but also enables him to become personally acquainted with some of the best practical horticulturists of the United States, and at the same time to familiarize himself with the methods used by such men.

1a. Plant Propagation. Sophomore. First term, 2 hours a week; with practice.

Lectures and recitations are given on the fundamental principles and methods of plant propagation, including both vegetables and fruits.

Text: The Nursery Book, *Bailey*.

Practice, 2 hours a week.

Practice in propagation of plants from seed, budding, grafting, etc., both in the laboratory and in the field.

(Required in Course 1.)

2. Vegetable Gardening. Sophomore. Second term, 3 hours a week; with practice.

Detailed instruction in planting, equipping and operating vegetable gardens for home and commercial purposes, and practical demonstrations and experience in the field; a thorough discussion of the methods used in Texas in growing the most important vegetable crops.

Lectures.

Practice. 2 hours a week.

The practice is devoted to the building of hot-beds, cold-frames, the mixing and application of fertilizers, planting, cultivating, spraying and harvesting of vegetable crops.

Prerequisite, *Horticulture* 1a.

(Required in Course I; and in the first year of the two-year course.)

3. Tree and Vine Fruits. Junior. First term, 3 hours a week; with practice.

A comprehensive study of the various kinds of fruit-orchards and vineyards, embracing the problems of location and soils, protection from insects and diseases, pruning, cultivating, harvesting and marketing.

Lectures.

Text: Popular Fruit Growing, *Green.*

Practice, 2 hours a week.

Practical exercises in laying out orchards, spraying, etc.

Prerequisite, *Horticulture* 1a.

(Required in Group B; and in the second year of the two-year course.)

4. Plant Breeding. Junior. Second term, 2 hours a week; with practice.

This course is planned to give the student a better understanding of the benefits to be derived from the intelligent breeding of plants. The relation of horticultural varieties and hybrids to each other and to their parent species is discussed, together with the principles of pollination, crossing and hybridization.

Text: Plant Breeding, *Bailey.*

Practice, 2 hours a week.

Most of the practice work is devoted to the cross pollination of our most common plants, and to the study of natural variations arising among garden plants.

(Required in Groups A, B.)

5. Spraying. Junior. Second term, 1 hour a week; with practice.

The history and development of spraying in the United States and foreign countries is studied, special attention being given to the evolution of spraying machinery and to formulas.

Text: Spraying of Plants, *Lodeman;* lectures.

Practice, 2 hours a week.

Practical work in making various spraying mixtures for insects and diseases and applying the preparation to orchard and vegetable crops.

(Required in Group B.)

6. Nut Culture. Junior. Second term, 2 hours a week, with practice.

This course includes a study of those nuts which are of the most economic importance. Special attention will be given to the native nuts. Top-working the native pecan and hickory to improved varieties of pecans will be fully discussed.

Practice. 2 hours a week.

Practice will be given in budding and grafting pecans in the Nursery Row; also in top-working our native pecans to improve varieties by means of the Ring, Patch and Chip Buds.

(Required in Group B.)

7. Pomology. Senior. First term, 3 hours a week; with practice.

A comprehensive study is made of the evolution of our native fruits. Special attention is given to the grape, plum, mulberry, apple, cherry, blackberry, dewberry, strawberry, persimmon, etc.

Text: Evolution of Our Native Fruits, *Bailey.*

Practice, 2 hours a week.

Practice in systematic pomology is given with such fruits as can be obtained during the Fall.

8. General Forestry. Senior. First term, 2 hours a week; with practice.

A brief study of the history of forestry, means of propagation and development and the effects of forests on soil, climate, etc.

Text: American Forestry, *Green.*

Practice, 2 hours a week.

Nursery work and observation of local forests.

(Required in Options 1, 4, 6, Group B.)

9. Experimental Horticulture. Senior. Second term, 2 hours a week; with practice.

Practical methods of planning and carrying out experiments, such as are in vogue by the most up-to-date experiment stations.

Practice, 2 hours a week.

The student will be required to plan his experiment, prepare the land, mix and apply the fertilizer, sow the seed, cultivate, spray and harvest the crop, and make a report on the results obtained.

(Required in Group B.)

10. Citrus Fruits and Fig Culture. Senior. Second term, 2 hours a week; with practice.

A study of all the species of citrus fruits grown in this country. Special attention is given to the growing of the hardier varieties that are adapted to the Texas coast region.

Lectures.

Text: Citrus Fruits and Their Culture, *Hume.*

Practice, 2 hours a week.

Practice in the study of propagation of the different species of citrus trees; special demonstration work in protecting citrus trees from frost.

(Option 1, Group B.)

11. Floriculture and Landscape Gardening. Senior. Second term, 2 hours a week; with practice.

The first part of this course is devoted to a full discussion of the methods of growing bedded plants, cut flowers, orchids, palms, etc. The second part is devoted to a study of the history and development of landscape gardening, the engineering and planting of parks, cemeteries and home grounds.

Text: Greenhouse Management, *Taft*. Lectures.

Practice, 2 hours a week.

Practice in the propagation of ornamental plants, the laying out of beds and the proper arrangement of plants on the home ground; special work in designing and laying out parks and cemeteries.

(Option 1, 4, Group B.)

11a. Floriculture. Senior. Second term, 2 hours a week; with practice.

A full discussion is given of the methods of growing bedded plants, cut flowers, orchids, palms, etc.

Text: Greenhouse Management, *Taft*.

Practice, 2 hours a week.

Practice is given in the propagation of ornamental plants, roses, carnations, chrysanthemums, etc.

(Required in Option 6, Group B.)

12. Introduction to Landscape Art. Junior. Second term, 2 hours a week; with practice.

This is a cultural course given for the purpose of developing in the student a true appreciation of Landscape Art.

Illustrated lectures and recitations.

Practice, 2 hours a week.

Practice in inspection and observation of views giving natural landscape effect.

(Required in Option 6, Group B.)

13. Landscape Design. Senior. First and second terms, 3 hours a week; with practice.

This course gives the principles underlying Landscape Art. Also deals with the solving and drafting of problems dealing with Landscape Work.

Illustrated lectures and recitations.

Practice, 2 hours a week.

Practice is given in plotting, mapping and solving original landscape problems.

(Required in Option 6, Group B.)

14. History of Landscape Design. Senior. First term, 2 hours a week.

A comprehensive study of the development of Landscape Design.

Illustrated lectures and recitations.

(Required in Option 6, Group B.)

15. Plant Culture and Propagation. First term, 3 hours a week; with practice.

A modification of course 1. The first part is devoted to plant culture, and followed by a thorough discussion of the propagation of plants, including all the fruits, ornamentals, and vegetables.

Practice, 2 hours a week.

Practice work in the propagation of seedlings and the different forms of budding and grafting, layering, etc.

(Required in the first year of the two-year course in Agriculture.)

16. Ornamentals. Senior. Second term, 2 hours a week.

This course embraces a thorough study of the ornamentals adapted to Southern conditions.

Lectures and recitations.

(Required in Option 6, Group B.)

17. Silviculture. Senior. First and second terms, 2 hours a week; with practice.

A study of the life history of trees. The effect of soil, climate, and site on trees in the local forests. The effect of fire, insects and disease upon forests.

Lectures and recitations.

Practice, 2 hours a week.

Working out the life history of trees. Descriptions of forest trees. Plotting the reproduction of forests by natural and artificial means.

(Required in Option 6, Group B.)

18. Farm Forestry. Senior. First term, 2 hours a week.

A study of the relation of the general subject of forestry to Agriculture. It embraces a study of the formation and development and utilization of the wood lot on the farm. It takes up in detail the planting of windbreaks and their effect on agricultural crops.

Practice, 2 hours a week.

Planning the wood lot in its relation to other agricultural crops. Preservation of timber.

(Required in Option 6, Group B.)

19. Forest Mensuration. Senior. Second term, 2 hours a week; with practice.

Determining the contents and rate of growth of individual trees and whole forests. Determining the height of standing trees. Measurement of logs and lumber by different units of measurements.

Lectures and recitations.

Practice, 2 hours a week.

Practical problems are given in measuring timber in forests, determining rate of growth, etc.

(Required in Option 6, Group B.)

20. Wood Preservation. Second term, 2 hours a week; with practice.

Discussion of different methods of treating timber with preservatives.

Lectures and recitations.

Practice, 2 hours a week.

Practical exercises in wood preservation.

(Required in Option 6, Group B.)

DEPARTMENT OF VETERINARY SCIENCE.

PROFESSOR FRANCIS, DR. MARSTELLER, DR. DUNN.

Instruction in Veterinary Science is given only to those taking the agricultural course. The class rooms and laboratory are fairly well equipped with books, instruments, skeletons, diseased bones, tumors, parasites, charts, etc. A small hospital erected in 1908 affords opportunity to witness surgical operations and the management and treatment of sick animals.

The courses are as follows:

1. Anatomy and Physiology of Domestic Animals. Sophomore. First term 2 hours a week; with practice.

This course is intended as an introduction to the study of Veterinary Science. It treats the fundamental processes of animal nutrition in detail so that each man may be prepared to meet the problems that arise in the economic production of beef, pork, and dairy products.

Reference books: Physiology of Domestic Animals, *Smith;* Veterinary Anatomy, *Sisson.*

Practice, 2 hours a week.

During the practice period there will be demonstrations on the composition and circulation of the blood, dissections of the heart, bowels, nervous system, eyes, muscles, and studies of the bones, joints and ligaments. The class will be divided into sections of four men each, so that each man can be graded on his work.

(Required in Course I.)

2. Pharmacology. Junior. First term, 2 hours a week; with practice.

A study of the substances used as medicines for animals, embracing a discussion of their origin, properties, preparation, administration, action, use, and dose.

Text: Veterinary Materia Medica and Therapeutics, *Winslow.*

Practice, 2 hours a week.

Each student is required to prepare powders, decoctions, waters, emulsions, spirits, tinctures, liniments, ointments, etc.

(Required in Groups A, C, D; optional in Group B.)

3. Non-infectious Diseases. Junior. Second term, 2 hours a week; with practice.

A discussion of diseases of locomotion, digestion, respiration, etc., of a non-contagious nature.

Text: Veterinary Medicine, Vols. 1, 2, 3, 4, 5, *Law.*

Practice, 2 hours a week.

Those who have not had a sufficient amount of dissection to understand the class work, may be required to spend the first few weeks in reviewing the anatomy of the parts under discussion. The hospital provides quite a number of subjects for observation and surgical operation.

(Required in Groups A, C, D; optional in Group B.)

4. Obstetrics. Junior. Second term, 2 hours a week; with practice.

A study of the processes of reproduction of animals. During the consideration of the subject, many points on embryology, barrenness, artificial breeding, castration of males and females, are brought out.

Text: Veterinary Obstetrics, *Williams.*

Practice, 2 hours a week.

Practice will embrace a dissection of the reproductive organs, and following this are frequent opportunities for observing diseases and irregularities incident to reproduction.

(Required in Groups C, D.)

5. Infectious Diseases. Senior. Second term, 2 hours a week.

This lecture course will embrace a discussion of such diseases as anthrax, black leg, rabies, glanders, hog cholera, tuberculosis, Texas fever, infectious anæmia, and their remedies. Especial mention will be made of those which may be injurious to public health through the consumption of meats or milk. Students have abundant opportunity to see hogs treated for cholera, and cattle for Texas fever.

Text: Pathology of Infectious Diseases of Animals, *Moore.*

(Required in Groups C, D.)

6. Anatomy. Senior. First and second terms, 3 hours a week; with practice.

A histological study of normal and diseased tissues, the dissection of special regions in regard to certain operations, the systematic examination of such groups as the cranial nerves, brachial plexus, or perhaps the blood, or lymph supply of some region. This work will vary with the qualifications and needs of those who elect it.

Texts: Stoke's Text-Book of Histology, *Lewis.*
Pathological Technique, *Mallory and Wright.*

Practice, 6 hours a week.

(Option 3, Group C.)

7. Advanced Laboratory Methods. Senior. Elective. First and second terms, 3 hours a week.

Those who wish to pursue this course must arrange with the instructors in advance, as it is not always possible to supply the material, teaching force, or laboratory space on short notice. It will be open only to those who have learned to work without constant aid of an instructor. It may embrace such work as the finer grades of blood-work of protozoa or bacteria, the ultra-microscopical examination of suspected material, the preparation of serial sections, or of fine injections, or of corrosive anatomy, etc., or the student may prefer the preparation of biological products for diagnosis or cure, such as mallein, tuberculin or the vaccines for hog cholera, black leg, anthrax, Texas fever, or the preparation of bacterins for pus-organism infections.

TWO-YEAR COURSE IN AGRICULTURE.

Second Year.

16. Animal Diseases. Second term, 3 hours a week; with practice.

A popular course on the common diseases of animals on the farm, and how to prevent and cure them.

Text: Veterinary Studies for Agricultural Students, *Reynolds.*

Practice, 2 hours a week.

A hasty review of the essential features of animal nutrition precedes the practice proper. Dissection of the organs of nutrition is provided, and following this an examination of the feet, eyes, etc., and the simpler surgical operations. Animals are examined for soundness, and each student must do the required work at its proper time.

DEPARTMENT OF AGRICULTURAL EXTENSION.

C. M. EVANS, SUPERINTENDENT; H. CORBETT MILLENDER, SECRETARY;
D. T. STEVENS, ASSISTANT.

The Extension Work of the College is in charge of the Extension Committee, consisting of the Dean of the College, the Dean of Agriculture, the Dean of Engineering, the Director of the Experiment Station, the Superintendent of Agricultural Extension, and the State Chemist, Chairman.

The extension work has been organized for the purpose of extending the benefits of the College to men actively engaged in farming and to others interested in agricultural pursuits but not in a position to enter upon a regular college course. In order to accomplish this purpose, the extension work has been planned to include the subdivisions mentioned below.

1. Correspondence Courses in Agriculture.

The following correspondence courses are offered. The instruction is given by regular College instructors.

1. Elementary Agriculture for Teachers.
2. Soils.
3. Fertilizers and Soil Fertility.
4. Grain Crops.
6. Hay and Forage Crops.
7. The Silo and Ensilage Crops.
8. Farm Dairying.
9. Farm Management.
11. Plant Propagation.
12. Vegetable Growing.
13. Small Fruits.
15. Citrus Fruits.
16. Beef Cattle.
17. Dairy Cattle.
18. Dual Purpose Cattle.
19. Sheep.
20. Hogs.
21. Horses and Mules.
22. Breeding Farm Animals.
23. Feeds and Feeding.
24. Creamery Management.
25. Elementary Entomology.
26. Economic Entomology.
27. Nut Culture.
28. Cotton Classing.

For further information, address Secretary Correspondence Courses, College Station, Texas.

2. Short Summer Course for Farmers. (At the College.)

This course is planned especially for the practical farmer who has not had the opportunity of taking a regular agricultural course. The work is essentially practical. It includes lectures, demonstrations, and practice in stock and grain judging; cotton classing; horticulture, including vegetable gardening and orcharding, pruning, spraying, budding, grafting, and tree surgery; feeds and feeding; veterinary science, including abortion and artificial impregnation, hog cholera, tuberculosis and Texas fever; soils, farm crops, and farm machinery; dairying, including butter-making, silos and ensilage; insects and plant diseases; fertilizers; terracing and good roads.

The work extends through one week and is divided into four main groups, namely: Agronomy, Animal Husbandry, Dairy Husbandry and Horticulture.

No entrance examination will be required. There will be no charge for tuition, but a small fee will be charged to cover expenses of the course.

The course is given during the latter part of July so as to meet the convenience of the greatest number of farmers of the State.

Board and lodging will be furnished for $1.25 per day. Those not boarding at the Mess Hall will be charged 25 cents per day for lodging.

Low rates will be offered on all railroads.

All students must register at the office of the Dean.

For detailed announcement, address the Dean of Agriculture, College Station, Texas.

3. Educational Demonstration Trains.

From time to time the College has operated special agricultural trains, on which lectures were delivered by experts in various branches of agriculture. The trains carried interesting exhibits of live stock, dairy machinery, agricultural and horticultural products, etc. This work will be continued in co-operation with the various railroads of the State.

4. Local Short Courses Over the State.

The College is prepared, in co-operation with the College of Industrial Arts at Denton, to conduct short courses in Agriculture and Domestic Science in a limited number of places over the State. These courses last one week. They are practically a movable College of Agriculture and Domestic Science.

5. Co-operation With Secondary Schools.

The law requires that Agriculture be taught in the public schools; and this department will co-operate with the authorities of any school desiring aid as to the methods of carrying out this requirement.

Address, for further information, Professor of Agricultural Education, College Station, Texas.

6. Boys' and Girls' Clubs.

Boys' and girls' clubs are organized under the Demonstration work in co-operation with the United States Department of Agriculture.

Those interested in the organization of boys' corn clubs, pig clubs, beef clubs, and other clubs, should address, Mr. H. H. Williamson, assistant in charge of club work, College Station, Texas.

Those interested in the organization of girls' canning clubs, poultry clubs, and other girls' clubs, should address Miss Bernice Carter, assistant in charge of Girls' Club Work, College Station, Texas.

7. Co-operation With Agricultural Fair Associations.

The College will co-operate with fair associations in securing judges for exhibits, educational demonstrations, and lectures of a popular nature on agricultural subjects.

8. Co-operation With Agricultural Organizations.

At present the College is co-operating with the Texas Industrial Congress by furnishing bulletins of information on crop production to contestants for the large premiums offered by that organization for the production of large yields of corn and cotton. It will co-operate with other organizations desiring its services, so far as possible.

9. Answers to Inquiries.

Experts at the College answer large numbers of inquiries, giving the information requested as far as possible.

10. Farmers' Co-operative Demonstration Work.

The Farmers' Co-operative Demonstration Work is carried on jointly by the Agricultural and Mechanical College and the Bureau of Plant Industry of the United States Department of Agriculture at Washington, D. C. The plan of co-operation consists in the placing of an agricultural expert in a county under the joint supervision of the College and the United States Department of Agriculture, for the carrying on of agricultural demonstrations in co-operation with the farmers of the county.

Any county wishing to secure the services of such a demonstration agent should address Mr. W. F. Proctor, State Agent, College Station, for further particulars.

Under an agreement entered into October 1, 1912, between the Bureau of Plant Industry, United States Department of Agriculture, and the Agricultural and Mechanical College of Texas, the Farmers' Co-operative Demonstration work is conducted by the following joint agents of the United States Department of Agriculture and the Agricultural and Mechanical College of Texas.

W. F. Proctor, State Agent in charge of Demonstration Work; J. L. Quicksall, Assistant State Agent; Four District Agents; about one hundred county agents; H. H. Williamson, assistant in charge of Club Work; Miss Bernice Carter, assistant in charge of the Girls' Club Work; thirty lady agents.

THE TEXAS AGRICULTURAL EXPERIMENT STATION.

DIRECTOR YOUNGBLOOD.

The Texas Agricultural Experiment Station system comprises the main station located at College Station and eleven correlated substations situated in various agricultural regions of the State. The Texas law relative to experiment stations prescribes that—

"The experiment station located at the Agricultural and Mechanical College in Brazos county, which is in part supported by the Federal Government, shall remain at said point as a permanent institution. It shall be known as the Main or Principal State Experiment Station and shall continue, as heretofore, under the supervision of the Board of Directors of the Agricultural and Mechanical College of Texas, which board shall have the authority to accept from the Federal government such aid in its support as is now or which may hereafter be provided by Congress. All other experiment stations of whatever character which may have heretofore been, or which may hereafter be, established, as provided in this act, shall be considered substations."

As the above quotation from the law indicates, the Main Texas Agricultural Experiment Station is located at College Station, Brazos county, Texas, as a department of the Agricultural and Mechanical College of Texas. It was organized January 25, 1888, and is supported by funds appropriated by the United States Government. This support comes in two distinct appropriations. The "Hatch Fund" of $15,000 annually was the original appropriation provided by an act of Congress passed in 1887, and may be used for experiments which may or may not be original in their nature. The "Adams Fund," also of $15,000 annually, can be used only for original investigations and experiments. This total of $30,000 annually appropriated by the Federal Government supports the several divisions of investigation. The substations, which are supported by State appropriation, afford opportunity for the various divisions of the Main Station to pursue investigations under varied agricultural conditions; hence the work of both the Main Station and the substations is accessible at all times to students in agriculture, and being fundamental, renders a valuable service. Aside from experimental results available, much practical and useful experience is gained by observations of plat work on the Experiment Farm, and of feeding and breeding experiments, erection of silos, silage production, and live stock judging, on the Feeding and Breeding Farm located here.

The several substations represent as may distinct agricultural regions. They are designated by number, and are located as follows:

No. 1—Beeville, Bee county.
No. 2—Troup, Smith county.
No. 3—Angleton, Brazoria county.
No. 4—Beaumont, Jefferson county.
No. 5—Temple, Bell county.
No. 6—Krum, Denton county.

No. 7—Spur, Dickens county.
No. 8—Lubbock, Lubbock county.
No. 9—Pecos, Reeves county.
No. 10—College Station, Brazos county (Feeding and Breeding Substation).
No. 11—Nacogdoches, Nacogdoches county.

The Main Station comprises nine divisions, each conducting investigations and experiments pertaining to that particular branch of agriculture. These divisions with their principal lines of work are as follows:

DIVISION OF VETERINARY SCIENCE.

DR. FRANCIS, DR. SCHMIDT.

The Division of Veterinary Science has done much valuable work on Texas fever, and is engaged in a further study of this problem and means of controlling it. This work has resulted in reducing the death rate from about 98 to 2 per cent. Other important investigations are being made, including work with Infectious Anæmia, an obscure disease of horses and mules which causes a heavy annual loss to the farmers of Texas, and other studies of diseases affecting farm animals.

DIVISION OF CHEMISTRY.

DR. FRAPS, MR. RATHER, MR. LEVIN, MR. CHEWNING.

The Division of Chemistry conducts investigations on the composition of Texas soils, the composition and digestibility of feedstuffs, and important work with fertilizers. Other lines of investigation are being pursued, including studies of irrigation waters, composition of paints, and so forth. This division also has supervision of the Texas Fertilizer Control work, and has rendered much valuable information and assistance to Texas farmers.

DIVISION OF HORTICULTURE.

MR. NESS, MR. HOTCHKISS.

The Division of Horticulture is conducting plant breeding work with dewberries and blackberries. Some very promising hybrids have been secured. Other work is being done with Crown Gall and its control. Orchard and garden work is also being conducted on the various substations, and much valuable information is anticipated.

DIVISION OF ANIMAL HUSBANDRY.

MR. BURNS.

The Division of Animal Husbandry is conducting cattle feeding experiments, testing the relative values of silage and other roughages, when fed with concentrates. Work is also under way in sheep breeding, crossing the Karakule with the more common breeds, with a view to making a study of inheritance problems, and with a view to producing a desirable breed of mutton sheep adapted to Texas conditions, which will also have desirable fur-bearing qualities. This division has established a foundation herd of swine with which to undertake some investigations at an early date.

DIVISION OF ENTOMOLOGY.

MR. NEWELL, MR. PADDOCK.

The Division of Entomology is making a study of inheritance in the honey bee. Crosses have been made of the Italian and Carniolan races. It is anticipated that this work will yield results bearing on the laws of breeding. The life history of the bee moth has been determined for this latitude and control measures perfected. Some work is being done on the life history and control of the peach tree borer, the life history and control of the wax moth, the control of the cotton boll worm, and other studies.

Work is also being done on the turnip louse, and in the swarm control of honey bees. This division has supervision of the Foul Brood Law of Texas, and is charged with enforcing this law.

DIVISION OF AGRONOMY.

MR. CONNER, MR. LEIDIGH, MR. JOBSON, MR. DICKSON.

The Division of Agronomy is conducting investigations with farm crops and soil improvement. Under farm crops studies particular attention has been given to variety tests of corn and the improvement of this crop by securing pedigreed strains. Some additional work with corn is being conducted with seeding rates and the effect of distribution of hills on yield. A study of oats is being made, dealing particularly with the purification of certain types in Red Rust Proof and the improvement of these types by individual plant selection. The cotton work consists of a study of the fundamental principles of inheritance in cotton, particularly with relation to the correlation of unit characters, such as earliness and prolificacy, drouth resistance and earliness, and so forth. Additional cotton work embraces variety tests, seeding rate tests, and so on. The legume work consists largely of variety tests of cowpeas, soy beans and peanuts for hay and seed production. Permanent pasture improvement work is also being carried. Under soil improvement studies are being made of crop rotations versus continuous cropping, and of cultural methods and fertilizer work.

DIVISION OF PLANT PATHOLOGY AND PHYSIOLOGY.

DR. BLODGETT.

The Division of Plant Pathology and Physiology is conducting investigations on the relation of soil types to tubercle production on leguminous plants, especially alfalfa. A careful study of the blossom-end blight disease of melons and means of control, is also being made. A third line of work being conducted is a study of the corn smut, the results of which will be of great economic value to the farmers of the State. This division is working in co-operation with the Bureau of Plant Industry, United States Department of Agriculture, in making a plant disease survey of this State.

DIVISION OF FARM MANAGEMENT.

MR. WILLARD.

The Division of Farm Management, which is conducted in co-operation with the Office of Farm Management, United States Department of Agriculture, is making a study of cropping systems and farm practices, including the cost of production of various crops and the economical distribution of farm labor; in other words, a study of the business conduct of the farm.

DIVISION OF FEED CONTROL.

MR. BOYETT, MR. ROGERS, MR. WOOD, MR. WOLTERS, MR. EHLINGER.

The Division of Feed Control has charge of the enforcement of the law regulating the sale of concentrated commercial feedstuffs in the State of Texas, by virtue of an act of the Legislature empowering the Director of the Experiment Station with the enforcement of this law. This law requires the registration of all concentrated commercial feedstuffs, showing the minimum content of protein and fat, and the maximum amount of crude fiber contained, as well as true labeling and correct standard weights.

Samples are drawn from time to time from various feeding stuffs offered for sale and sent to this division by duly authorized inspectors, for analyses. The results secured by these analyses are compared with the manufacturers' guarantees on file with this division, by which it is determined whether or not the provisions of this law are being fulfilled.

The rulings specifying the names and guaranteed analyses of the various feedstuffs offered for sale are based on the chemical analyses of a large number of samples and a study of the methods of milling these products. It is the intention of this division to continue to make investigations of the various feedstuffs and the milling problems involved, in order that the provisions of this law may be properly enforced. This division is working in co-operation with the Federal Pure Feed Control relative to interstate shipments, and in harmony with the National Association of Feed Control Officials, with which it is affiliated.

The results secured by the work of the divisions of the Station are reported from time to time in bulletin form, sent free to farmers of the State, and others interested in agricultural development, upon application to the director. In addition to these bulletins involving more or less investigations into agricultural problems, press bulletins giving popular information in regard to agricultural topics, are sent out from time to time.

The director and the various members of the staff carry a heavy correspondence with farmers and stockmen of the State, disseminating in this way much useful and valuable information in regard to local conditions and agricultural problems in the varied sections of the State.

The Experiment Station maintains an exhibit showing the results of experiment work conducted, and places this exhibit at the National Corn Exposition, the Texas Farmers' Congress, and the State Fair of Texas, all of which are annual events. This exhibit has resulted in putting the farmers of the State in touch with much useful and valuable knowledge resulting from the work of the station.

The Texas Agricultural Experiment Station is available at all times for service to the citizens of Texas, in any possible manner. All communications intended for the station should be addressed to "The Director, Texas Agricultural Experiment Station, College Station, Texas."

The School of Engineering

FACULTY OF THE SCHOOL OF ENGINEERING.

CHARLES PURYEAR, M. A., C. E.,
President pro tempore.

D. W. SPENCE, C. E.,
Dean.

CHARLES PURYEAR, M. A., C. E.,
Dean of the College and Professor of Mathematics.

D. W. SPENCE, C. E.,
Professor of Civil Engineering.

C. P. FOUNTAIN, A. M.,
Professor of English.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

O. F. CHASTAIN,
Professor of History.

J. B. BAGLEY, B. A.,
Professor of Textile Engineering.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

R. J. POTTS, A. B., C. E.,
Professor of Highway Engineering.

A. MITCHELL, B. C. E.,
Professor of Drawing.

LEVI G. BROWN, First Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics and Commandant of Cadets.

S. J. FOUNTAIN, B. S.,
Professor of Architecture.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

H. E. SMITH, M. E.,
Professor of Steam Engineering.

W. T. WRIGHT, B. S., A. B.,
Acting Professor of Physics.

COURSES IN THE SCHOOL OF ENGINEERING.

In the School of Engineering, four-year courses are offered in Architecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering and in Textile Engineering. Each of these courses leads to the degree of Bachelor of Science (B. S.), the particular course pursued being specified in the diploma. In Textile Engineering a two-year course is also offered. In the Civil Engineering department a short winter course, intended to be of assistance particularly to county surveyors and highway superintendents, is likewise offered. Graduate courses leading to the degrees of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, and Textile Engineer, respectively, are offered to young men who desire to pursue their studies beyond the field covered by the four-year courses. Descriptions of the various courses will be found in the pages allotted to the several departments.

In all the engineering courses a considerable portion of the student's time is devoted to the study of general subjects, such as English, history, mathematics, physics, chemistry, drawing, and the use of shop tools. The work in Language is optional, but the student who elects a language in his Sophomore year must continue the same language in his Junior year. The military training is of especial value as better fitting young engineers to be organizers and directors of men. In the several courses the more technical studies are intended to equip the students for the particular fields of engineering development they desire to enter. The graduate courses are altogether technical, but in each of them a portion of the time of the student is devoted to work in departments other than the one in which he takes his major studies.

At intervals throughout the session non-resident lecturers, usually men who have attained prominence in some branch of engineering or industrial pursuit, are invited to address the students in order that they may more closely connect their college instruction with the work they will be called upon to do after they enter upon their professional careers. For the same reason, inspection trips to works or plants of interest to engineers are made, usually during the senior year, under the direction of some member or members of the teaching staff. These trips afford the student the opportunity of seeing many things of interest and value.

COURSE IN ARCHITECTURE.

The aim of this course is to prepare young men for the general practice of architecture. While considerable stress is put upon the aesthetic side of this work, students are thoroughly grounded in the underlying principles of construction, sanitation, heating, and ventilating.

Students who have successfully completed this course are prepared to hold responsible positions with practicing architects, and after a few years experience, they should be well equipped to enter the profession of architecture.

IX.—COURSE IN ARCHITECTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Architecture 24 Elements of Design.	1
English 1 Rhetoric and Composition.	3	Drawing 2 Descriptive Geometry.	3
Mathematics 1 Solid Geometry.	3	English 1 Rhetoric and Composition.	3
Mathematics 2 Algebra.	3	Mathematics 2 Algebra.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mathematics 3 Trigonometry.	3
Physics 3 Elementary.	2	Mechanical Engineering 1 Elementary Mechanics.	2
		Physics 3 Elementary.	2
	16		17
Architecture 20	8	*Architecture* 20	8
Architecture 22	4	*Architecture* 22	4
Drawing 1	2	*Drawing* 1	2
Physics 3	2	*Physics* 3	2
	16		16

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Architecture 25 Principles of Composition.	1	Architecture 26 History of Architecture.	2
Architecture 26 History of Architecture.	2	Architecture 27 Carpentry Construction.	2
Architecture 27 Carpentry Construction.	2	English 2 Literature.	2
English 2 Literature.	2	English 3 Composition.	1
English 3 Composition.	1	Mathematics 5 Calculus.	6
Mathematics 4 Analytics.	6	Physics 6 Electricity and Magnetism.	2
Military Science 1 Drill Regulations.	2	Language	3
Language	3	*or* History 2 English.	2
or History 2 English.	2		
	18 *or* 19		17 *or* 18
Architecture 27	2	*Architecture* 27	2
Architecture 28	8	*Architecture* 28	8
Architecture 29	4	*Architecture* 29	2
		Physics 6	2
	14		14

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Architecture 30 History of Architecture.	2	Architecture 35 Heating and Ventilating.	1
Architecture 31 Masonry Construction.	2	Architecture 36 Steel Construction.	2
Architecture 34 Building Sanitation.	1	Electrical Engineering 6 Lighting and Wiring.	1
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
Civil Engineering 6 Mechanics of Materials.	4	Civil Engineering 12 Stresses.	2
Language	3	Language	3
or English 5 Argumentation.	1	*or* English 5 Argumentation.	1
	13 *or* 15		10 *or* 12
Architecture 32	2	*Architecture 36*	2
**Architecture 37*	4	**Architecture 37*	4
Architecture 39a	10	*Architecture 39a*	14
Chemistry 1a	2	*Chemistry 1a*	2
Civil Engineering 6	2	*Civil Engineering 12*	2
	20 *or* 16		24 *or* 20

SENIOR YEAR.

(For Class of 1915 only.)

Architecture 25 Principles of Composition.	1	Architecture 27 Carpentry Construction.	2
Architecture 40 History of Ornament.	2	Architecture 41 Business Practice.	1
Civil Engineering 14 Stresses.	2	Architecture 42 History of Sculpture and Painting.	2
Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
		Military Science 2	1
	9		10
Architecture 43	16	*Architecture 43*	14
Architecture 45	4	*Architecture 45*	4
Architecture 47	4	*Architecture 47*	4
Civil Engineering 14	2	*Architecture 27*	2
	26		24

SENIOR YEAR.

(For Class of 1916.)

Architecture 40 History of Ornament.	2	Architecture 41 Business Practice.	1
Civil Engineering 14 Stresses.	2	Architecture 42 History of Sculpture and Painting.	2
Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
		Military Science 2	1
	8		8
Architecture 43	16	*Architecture 43*	18
Architecture 45	4	*Architecture 45*	4
Architecture 47	4	*Architecture 47*	4
Civil Engineering 14	2		
	26		26

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*Not required of students electing language.

COURSE IN ARCHITECTURAL ENGINEERING.

This course is intended to prepare the graduate to enter the profession of architectural engineer, or of builder; it is also intended for young men who desire a technical education in order to fit themselves for engaging in commercial enterprises related to building construction, such as the manufacture or sale of building materials, and the erection, operation, or insurance of buildings.

VII.—COURSE IN ARCHITECTURAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of that department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Architecture 24 Elements of Design.	1
English 1 Rhetoric and Composition.	3	Drawing 2 Descriptive Geometry.	3
Mathematics 1 Solid Geometry.	3	English 1 Rhetoric and Composition.	3
Mathematics 2 Algebra.	3	Mathematics 2 Algebra.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mathematics 3 Trigonometry.	3
Physics 3 Elementary.	2	Mechanical Engineering 1 Elementary Mechanics.	2
		Physics 3 Elementary.	2
	16		17
Architecture 21	6	*Architecture* 21	6
Architecture 23	2	*Architecture* 23	2
Drawing 1	2	*Drawing* 1	2
Mechanical Engineering 13*a*	4	*Mechanical Engineering* 14*a*	4
Physics 3	2	*Physics* 3	2
	16		16

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Architecture 25 Principles of Composition.	1	Architecture 26 History of Architecture.	2
Architecture 26 History of Architecture.	2	Architecture 27 Carpentry Construction.	2
Architecture 27 Carpentry Construction.	2	English 2 Literature.	2
English 2 Literature.	2	English 3 Composition.	1
English 3 Composition.	1	Mathematics 5 Calculus.	6
Mathematics 4 Analytics.	6	Physics 6 Electricity and Magnetism.	2
Military Science 1 Drill Regulations.	2	Language	3
Language	3	*or* History 2 English.	2
or History 2 English.	2		
	18 *or* 19		17 *or* 18

First Term.	Hours per week.	Second Term.	Hours per week.
Architecture 27	2	*Architecture* 27	2
Architecture 28	8	*Architecture* 28	8
Architecture 29	4	*Architecture* 29	2
		Physics 6	2
	14		14

JUNIOR YEAR.

Architecture 30 History of Architecture.	2	Architecture 36 Steel Construction.	2
Architecture 31 Masonry Construction.	2	Chemistry 1a Inorganic.	3
Architecture 34 Building Sanitation.	1	Civil Engineering 10 Masonry Construction.	3
Chemistry 1a Inorganic.	3	Civil Engineering 12 Stresses.	2
Civil Engineering 6 Mechanics of Materials.	4	Physics 7 General.	2
Language	3	Language	3
or English 5 Argumentation.	1	*or* English 5 Argumentation.	1
		and Mechanical Engineering 3 Elem. Steam Eng.	3
	13 *or* 15		16 *or* 15

Architecture 33	4	*Architecture* 36	2
Architecture 38	4	*Architecture* 39	8
Architecture 39	8	*Chemistry* 1a	2
Chemistry 1a	2	*Civil Engineering* 12	2
Civil Engineering 6	2	*Physics* 9	2
	20		16

SENIOR YEAR.

Civil Engineering 14 Stresses.	2	Architecture 35 Heating and Ventilating.	1
Civil Engineering 18 Reinforced Concrete.	3	Architecture 41 Business Practice.	1
Economics 4 Economic Organization.	3	Civil Engineering 23 Higher Structures.	2
English 6 Public Speaking.	1	Chemistry 10 Geology.	4
*Mechanical Engineering 3 Elem. Steam Eng.	3	Economics 4 Economic Organization.	3
**or* Mechanical Engineering 5a Steam Engines and Boilers.	2	Electrical Engineering 6 Lighting and Wiring.	1
		English 6 Public Speaking.	1
		Military Science 2	1
	11 *or* 12		14

Architecture 44	8	*Architecture* 46	16
Architecture 46	11	*Chemistry* 10	2
Civil Engineering 14	2	*Civil Engineering* 23	2
	21		20

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*Students who elected Language, take Mechanical Engineering 3.

DEPARTMENT OF ARCHITECTURE.

PROFESSOR S. J. FOUNTAIN.

Instruction in this department is based upon the use of text-books and lectures in the class room and by practice in the drafting rooms. Problems are assigned the students in design and construction similar to those they will meet in actual practice.

The Professor of Architecture is a Patron of an Atelier of the Society of Beaux-Arts Architects of New York City which gives the students an opportunity of taking problems given out by this society. These problems are given out simultaneously to all the colleges of Architecture in the United States and are then sent to New York to be judged by a jury of prominent architects and this enables students to compete directly with the students of architecture of the largest colleges and universities.

The courses are as follows:

20. Architectural Drawing. Freshman. First and second terms, 8 hours a week. Practice.

Relations of plans, elevations, and sections to each other. Architectural elements; doors, windows, mouldings; the Orders; conventional rendering.

(Required in Course IX.)

21. Architectural Drawing. Freshman. First and second terms, 6 hours a week. Practice.

The same as Course 20.

(Required in Course VII.)

22. Freehand Drawing. Freshman. First and second terms, 4 hours a week. Practice.

Charcoal and pencil drawing from geometrical objects and from the cast.

(Required in Course IX.)

23. Freehand Drawing. Freshman. First and second terms, 2 hours a week. Practice.

Charcoal and pencil drawing from geometrical objects and from the cast.

(Required in Course VII.)

24. Elements of Design. Freshman. Second term, 1 hour a week.

Lectures on the elements of Architecture; mouldings, windows, doors, columns, walls, cornices, roofs; proper grouping and arrangements of these elements; principles of planning.

(Required in Courses VII and IX.)

25. Principles of Composition. Sophomore. First term, 1 hour a week.

Principles underlying pleasing arrangements, unity, individuality, similarity, subordination. Analysis of buildings. Primary masses, secondary masses, details, horizontal division, proportion, contrast, practical applications. Comparison and criticism.

Text: Architectural Composition, *Robinson*.

Prerequisite, *Architecture* 24.

(Required in Courses VII and IX.)

26. History of Architecture. Sophomore. First and second terms, 2 hours a week.

From the Egyptian period to the period of the Renaissance. Effects of political, economic, and geographical conditions. Influence of materials, climate and structural systems. This is supplemented by having the students make tracings from various works on the different styles of architecture.

Recitations: Illustrated lectures.

Text: A History of Architecture, *Fletcher-Fletcher*.

(Required in Courses VII and IX.)

27. Carpentry Construction. Sophomore. First and second terms, 2 hours a week; with practice.

The growth, cutting, seasoning, and working of woods. Framing, details, specifications.

Practice, 2 hours a week.

Text: Building Construction and Superintendence, Part 2, *Kidder*.

(Required in Courses VII and IX.)

28. Architectural Design. Sophomore. First and second terms, 8 hours a week. Practice.

Rendered Order problems, involving simple composition.

Prerequisite, *Architecture* 20 and 21.

(Required in Courses VII and IX.)

29. Freehand Drawing. Sophomore. First term, 4 hours, second term, 2 hours a week. Practice.

Charcoal from the cast.

Prerequisite, *Architecture* 22 or 23.

(Required in Courses VII and IX.)

30. History of Architecture. Junior. First term, 2 hours a week.

From the period of the Renaissance to modern times.

Recitations: Illustrated lectures.

Text: A History of Architecture, *Fletcher-Fletcher*.

Prerequisite, *Architecture* 26.

(Required in Courses VII and IX.)

31. Masonry Construction. Junior. First term, 2 hours a week.

Materials, foundations, walls, details. Terra-cotta, fire proofing.

Recitations.

Text: Building Construction and Superintendence, Part 1, *Kidder*.

(Required in Courses VII and IX.)

32. Masonry Construction. Junior. First term, 2 hours a week. Practice.

Drawing and designing details of building construction and masonry. Text: Building Construction and Superintendence, Part 1, *Kidder*. Must be preceded or accompanied by *Architecture* 31.
(Required in Course IX.)

33. Masonry Construction. Junior. First term, 6 hours a week. Practice.

Drawing and designing details of building construction and masonry. Text: Building Construction and Superintendence, Part 1, *Kidder*. Must be preceded or accompanied by *Architecture* 31.
(Required in Course VII.)

34. Building Sanitation. Junior. First term, 1 hour a week.

Lectures on water supply, drainage, sewage disposal, and plumbing for buildings.
(Required in Courses VII and IX.)

35. Heating and Ventilating. Junior. Second term, 1 hour a week.

The general principles of heating and ventilating and calculation of the sizes of heating surfaces, heaters, boilers, and steam and water pipes and air ducts.
Text: Heating and Ventilation, *Hubbard*.
(Required in Courses VII and IX.)

36. Steel Construction. Junior. Second term, 2 hours a week; with practice.

Lectures on the design and construction of columns, beams, girders, and trusses. Details of steel framing. Standard connections, steel and cast iron stairs, spacing of columns.
Practice, 2 hours a week.
Prerequisite, *Civil Engineering* 6.
(Required in Courses VII and IX.)

37. Freehand Drawing. Junior. First and second terms, 4 hours a week. Practice.

Charcoal from the cast.
Prerequisite, *Architecture* 29.
(Required in Course IX.)

38. Freehand Drawing. Junior. First term, 4 hours a week. Practice.

Charcoal from the cast.
Prerequisite, *Architecture* 29.
(Required in Course VII.)

39. Architectural Design. Junior. First and second terms, 8 hours a week. Practice.

Rendered plan problems and sketch problems.
Prerequisite, *Architecture* 28.
(Required in Course VII.)

39a. Architectural Design. Junior. First term, 10 hours, second term, 14 hours a week. Practice.

Rendered plan problems and sketch problems.

Prerequisite, *Architecture* 28.

(Required in Course IX.)

40. History of Ornament. Senior. First term, 2 hours a week.

Lectures on the history of ornament of the different periods.

Prerequisite, *Architecture* 30.

(Required in Course IX.)

41. Business Practice. Senior. Second term, 1 hour a week.

Lectures on the organization and management of an architect's office, and on the responsibilities of an architect to the owner, contractor, and the community at large.

(Required in Courses VII and IX.)

42. History of Sculpture and Painting. Senior. Second term, 2 hours a week.

Lectures on sculpture and painting.

Prerequisite, *Architecture* 30.

(Required in Course IX.)

43. Architectural Design. Senior. First term, 16 hours, second term, 20 hours a week. Practice.

Advanced problems in original design.

Prerequisite, *Architecture* 39.

(Required in Course IX.)

44. Architectural Design. Senior. First term, 8 hours a week. Practice.

Advanced problems in original design.

Prerequisite, *Architecture* 39.

(Required in Course VII.)

45. Building Construction. Senior. First and second terms, 4 hours a week. Practice.

Graded problems in structural design of buildings, to be executed in wood, iron, masonry, steel, or reinforced concrete.

Prerequisite, *Architecture* 27, 31, 36.

(Required in Course IX.)

46. Building Construction. Senior. First term, 11 hours, second term 16 hours a week. Practice.

Graded problems in structural design of buildings, to be executed in wood, iron, masonry, steel, or reinforced concrete.

Prerequisite, *Architecture* 27, 31, 36.

(Required in Course VII.)

47. Freehand Drawing. Senior. First and second terms, 4 hours a week. Practice.

Advanced charcoal drawing from the cast and from life.

Prerequisite, *Architecture* 37.

(Required in Course IX.)

COURSE IN CHEMICAL ENGINEERING.

This course is designed to prepare young men for technical work in those industries in which raw materials undergo a chemical change in the process of manufacture. Many such industries important to the present and future development of this State are those dealing with cottonseed products, sugar, leather, petroleum, cement, ceramics and iron and steel. The analytical chemistry given in the course is sufficient to enable the graduate to engage in the work of a commercial analyst or to enter an industrial plant as a control chemist. The control chemist repeatedly analyzes and evaluates the raw material used in the manufacture as well as the intermediate and finished products. It is through such control that manufactures of this kind have been made scientific. Pure food laws and other legal enactments calculated to protect the people against fraud have, of late years, greatly accentuated the importance of this work. At the same time enough work is given in general engineering practice to enable the graduate who enters the work as a control chemist to come in time to a full understanding and mastery of the industry in which he is engaged.

The fifth year's work, leading to the degree of chemical engineer, is designed to facilitate the transformation of the control chemist into the manager of an industrial plant, capable of adapting chemical processes to varying conditions and improving upon them as occasion demands.

VIII.—COURSE IN CHEMICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

First Term.	Hours per week	Second Term.	Hours per week.
Chemistry 1 Inorganic.	3	Chemistry 1 Inorganic.	3
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
Mathematics 4 Analytics.	6	Mathematics 5 Calculus.	6
Military Science 1 Drill Regulations.	2	Physics 4 General.	3
Physics 4 General.	3	Language	3
Language	3	*or* History 2 English.	2
or History 2 English.	2		
	19 *or* 20		17 *or* 18
Chemistry 1	4	*Chemistry* 1	4
Drawing 6	2	*Drawing* 6	4
Drawing 33	2	*Physics* 4	2
Physics 4	2		
	10		10

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemical Engineering 1 Industrial Chemistry.	3	Chemical Engineering 3 Metallurgy.	3
Chemistry 4 Organic.	2	Chemistry 4 Organic.	2
Chemistry 5 Economic Geology.	2	Civil Engineering 6a Mechanics of Materials.	2
Civil Engineering 7 Hydraulics.	2	Civil Engineering 7 Hydraulics.	2
Mathematics 6 Practical.	2	Electrical Engineering 5 Electrical Machinery.	4
Mechanical Engineering 3 Elementary Steam Engineering.	3	Language	3
Language	3	*or* English 5 Argumentation.	1
or English 5 Argumentation.	1	*and* Mechanical Eng. 4 Kinematics.	3
and Civil Engineering 16 Contracts.	2		
	17		17 *or* 16

Chemistry 4	2	*Chemistry* 4	2
Chemical Engineering 2	4	*Chemical Engineering* 4	4
Chemistry 5	2	*Civil Engineering* 6a	2
Mechanical Engineering 15	4	*Electrical Engineering* 5	3
	12		11

SENIOR YEAR.

Chemical Engineering 5 Physical Chemistry.	3	Chemical Engineering 5 Physical Chemistry.	3
Chemical Engineering 6 Technical Analysis.	2	Chemical Engineering 6 Technical Analysis.	2
Civil Engineering 15 Water Supply Engineering.	2	Chemistry 11 History of Chemistry.	1
Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Mechanical Engineering 5 Steam Engines and Boilers.	3	Mechanical Engineering 5 Steam Engines and Boilers.	3
Mechanical Engineering 6 Eng. Mechanics.	2	Mechanical Engineering 6 Eng. Mechanics.	2
		Military Science 2	1
	16		16

Chemical Engineering 5	2	*Chemical Engineering* 5	2
Chemical Engineering 6	6	*Chemical Engineering* 6	6
Mechanical Engineering 22a	2	*Mechanical Engineering* 22a	2
	10		10

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

PROFESSOR HEDGES, ASSISTANT PROFESSOR GORDON, ASSISTANT PROFESSOR NELSON, MR. THORNTON, MR. NEWTON, MR. BRYANT.

The beginning work of the Course in Chemical Engineering is described under the Department of Chemistry, page 150. Chemistry and Chemical Engineering today cover such a broad field that in the Senior year students are advised to specialize in some branch of technical analysis such as the chemical control of a cement plant or of a cottonseed plant. All the work is supplemented by laboratory work. The chemical industries most highly developed in this State are inspected from time to time.

The courses in Chemical Engineering are as follows:

1. Industrial Chemistry. Junior. First term, 3 hours a week.

This is an introductory course, covering the principal applications of chemical processes to commercial products, mostly organic in nature, such as gas manufacture, petroleum products, soaps, the starch and sugar industries, and the manufacture of paper, leather and explosives. The manufacture of fertilizers, cement and ceramics is also considered.

Text: Industrial Chemistry, *Rogers and Aubert.*

Prerequisite, *Chemistry* 1.

(Required in Course VIII; in Senior year in Course III.)

2. Quantitative Analysis. Junior. First term, 4 hours a week. Practice.

This course serves as an introduction to the methods of exact analysis, typical inorganic substances being used, such as iron, sulphuric acid, silver and chlorine. The work is at first gravimetric, then volumetric.

Text: Quantitative Chemical Analysis, *Foulk.*

Prerequisite, *Chemistry* 2.

(Required in Course VIII.)

3. Metallurgy of Iron and Steel. Junior. Second term, 3 hours a week.

In this course the metallurgy of iron and the manufacture of steel are considered in detail, especial attention being given to the nature and location of valuable iron ore deposits, together with suitable fluxes; to the nature and availability of proper fuels, together with the furnaces used; to the constitution of the resulting pig iron and the manufacture of steel therefrom; and finally to the chemistry of the different kinds of steel and their adaptability in engineering practice. Lectures and recitations.

Text: The Metallurgy of Iron and Steel, *Stoughton.*

Prerequisite, *Chemistry* 1.

(Required in Course VIII; in Senior Year Course III:)

4. Silicate Analysis. Junior. Second term, 4 hours a week. Practice.

A silicate is to be analyzed for all its constituents until checking duplicate determinations are obtained.

Text: The Analysis of Silicate and Carbonate Rocks, *Hillebrand.*
Prerequisite, *Chemical Engineering* 2.
(Required in Course VIII.)

5. Physical Chemistry. Senior. First and second terms, 3 hours a week; with practice.

This course presents, wherever known, physical explanations of chemical and allied phenomena, together with a mathematical exposition of the laws involved. Some of the subjects thus developed are the atomic theory, the periodic law, solubility, fusion, vaporization, the phase rule, dissociation in solution, chemical equilibrium, and relative chemical activity. It leads up to a consideration of the best research work of today. Most of the theoretical conclusions deduced in the class room are confirmed in the laboratory. Lectures and recitations.

Practice, 2 hours a week.
Prerequisite, *Chemical Engineering* 3; *Mathematics* 4.
(Required in Course VIII.)

6. Technical Analysis. Senior. First and second terms, 2 hours a week; with practice.

This course consists of lectures and conferences with regard to technical methods of analysis, especially in exercising chemical control over industrial plants, such as cement manufacturing, the cottonseed oil industry, and the sugar industry. After studying various methods in general, the student will take up some one system of chemical control and master it, so that he might creditably enter the works as a control chemist in his chosen line.

The nature of this work is inadequately represented by the time allotted to it. The methods of exact analysis require an intelligent, painstaking supervision not limited by time allotments. The degree to which this fact is appreciated by the student determines his value as an analyst. The technical journals and official methods will frequently be consulted by the student.

Practice, 6 hours a week.
Prerequisite, *Chemical Engineering* 4.
(Required in Course VIII.)

11. Advanced Industrial Chemistry. Fifth Year. First and second terms, 2 hours a week; with practice.

This course consists of lectures and conferences with regard to methods and problems in industrial chemistry. The efficiency of processes and plants, the advisability of replacing old processes by new, the evaluation of rocks, clays, coals and petroleum, the economic and commercial aspects of particular cases, with particular reference to the future development of the chemical industries in this State, all receive attention.

Practice, 12 hours a week.

The practice in this course consists in conducting experiments related to the chemical industries, on a scale affording, as nearly as equipment will allow, the conditions obtaining in the works, with a view of ascertaining the active factors in the different processes and the effect of varying them; also a detailed study of the status of the different industries in this State.

Prerequisite, *Chemical Engineering* 4.

(Required in Course VIII.)

12. Chemistry of the Rarer Elements. Fifth Year. First term, 2 hours a week; with practice.

In this course most of the rarer elements are prepared from their ores and identified. Those of industrial importance, such as tungsten, cerium and thorium, as well as gold and platinum, receive most attention.

Practice, 4 hours a week.

(Required in Course VIII.)

13. Chemical Preparations. Fifth Year. Second term, 2 hours a week; with practice.

In this course purely chemical industries which are not carried out on the largest scale receive attention. These consist, for the most part, of the manufacture of chemicals and drugs.

Practice, 4 hours a week.

(Required in Course VIII.)

EQUIPMENT.

Besides the equipment described under the Department of Chemistry, this department is provided with a separate room for technical analysis and one for advanced industrial chemistry. The latter is not yet fully equipped. The former is provided with vacuum and compressed air systems, colorimeters, calorimeters, refractometers, Lovibond tintometer, combustion furnaces, gas burettes and other special apparatus used in technical analysis. The laboratory has the usual equipment for work in physical chemistry.

COURSE IN CIVIL ENGINEERING.

This course has for its object the preparation of young men for entrance upon professional practice in the fields of surveying; highway construction and maintenance; municipal engineering as related to street location, paving, water supply, sewerage, sewage disposal works, street railways, etc.; railway location, construction and maintenance; the construction of levees and other protection works to guard against damage by overflows; irrigation and drainage engineering; the construction of canals, reservoirs, the installation of pumping plants, filtration works, etc.; the design and construction of bridges, steel buildings, and masonry structures. Attention is given to drafting so that the student may be prepared to represent his designs on paper; to the preparation of contracts, specifications and estimates of cost, and to the supervision of work, etc. A thorough grounding in the underlying principles of engineering is given, together with the application of these principles to as many special lines as time will permit.

In the Division of Highway and Rural Engineering the Department of Civil Engineering is meeting a constantly increasing demand along lines of great importance to the State. In addition to conducting classes in road building, and in street paving and improvement, the Professor of Highway Engineering delivers lectures and gives advice on highway matters all over the State to as full extent as his time and other duties permit. The Instructor in Terracing gives instruction in farm terracing and the conservation of soil moisture to classes at the College for one-half the scholastic year, the remainder of his time being devoted to co-operative work with Farmers' Institute and individual farmers. Free lectures and demonstrations of terracing work are made on request at any point in the State. Exhibits for instruction in highway engineering and in terracing, are shown at the leading fairs and on demonstration trains for the purpose of giving as many people as possible an opportunity to become familiar with approved methods in these lines. The Professor of Highway Engineering or the Instructor in Terracing, and sometimes both, will be present wherever these exhibits are shown to explain the models and to explain present practice.

The fifth year course, leading to the degree of Civil Engineer (C. E.), offers opportunity for more advanced study in some of the branches of Civil Engineering than can be had within the limit of the four-year course, and includes some elective work in subjects offered in departments other than that of Civil Engineering. Every student who can afford the time and money is urged to follow his four-year course, when possible, with the more technical course covered by the fifth year's work.

IV.—COURSE IN CIVIL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric Composition.	3	English 1 Rhetoric Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17

Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

Civil Engineering 1 Surveying, Leveling and Topography.	3	Civil Engineering 4 Railroad Engineering.	3
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
Mathematics 4 Analytics.	6	Mathematics 5 Calculus.	6
Military Science 1 Drill Regulations.	2	Physics 4 General.	3
Physics 4 General.	3		
Language	3	Language	3
or History 2 English.	2	*or* History 2 English.	2
	19 *or* 20		17 *or* 18

Civil Engineering 1	4	*Civil Engineering* 4	4
Drawing 33	2	*Drawing* 6	4
Drawing 6	2	*Physics* 4	2
Physics 4	2		
	10		10

JUNIOR YEAR.

First Term.	Hours per week.
Chemistry 1a Inorganic.	3
Civil Engineering 5 Railroad Engineering.	2
Civil Engineering 6 Mechanics of Materials.	4
Civil Engineering 7 Hydraulics.	2
Electrical Engineering 5 Electrical Engineering.	4
Mathematics 6 Practical.	2
Language	3
or English 5 Argumentation.	1
	18 *or* 20

Chemistry 1a	2
Civil Engineering 5	3
Civil Engineering 6	2
*Drawing 9	2
	9 *or* 7

Second Term.	Hours per week
Chemistry 1a Inorganic.	3
Civil Engineering 7 Hydraulics.	2
Civil Engineering 9 Roads.	2
Civil Engineering 10 Masonry Construction.	3
Civil Engineering 11 Roofs and Bridges.	2
Mechanical Engineering 3 Elementary Steam Engineering.	3
Language	3
or English 5 Argumentation.	1
and Biology 8 Sanitary Water Analysis.	1
	17 *or* 18

Chemistry 1a	2
Civil Engineering 7	2
Civil Engineering 8	4
Electrical Engineering 5	3
**Biology 8	4
	15 *or* 11

Summer Practice, Civil Engineering 24 .... 4 weeks.

SENIOR YEAR.

Civil Engineering 13 Roofs and Bridges.	4
Civil Engineering 15 Water Supply Engineering.	2
Civil Engineering 16 Contracts and Specifications.	2
Civil Engineering 17 Irrigation and Drainage.	2
Civil Engineering 18 Reinforced Concrete.	2
Economics 4 Economic Organization.	3
English 6 Public Speaking.	1
	16

Civil Engineering 13	8
Civil Engineering 19	4
Mechanical Engineering 22*a*	2
	14

Civil Engineering 20 Sewerage.	2
Civil Engineering 25 Modern Pavements.	3
Civil Engineering 22 Higher Structures.	3
Economics 4 Economic Organization.	3
English 6 Public Speaking.	1
Chemistry 10 Geology.	4
Military Science 2	1
	17

Civil Engineering 13	4
Civil Engineering 19	4
Civil Engineering 22	2
Chemistry 10	2
	12

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*Students electing Language do not take Drawing 9.
**For students not electing Language.

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR SPENCE, PROFESSOR POTTS, ASSOCIATE PROFESSOR RICHEY, ASSOCIATE PROFESSOR LOVE, ASSISTANT PROFESSOR CROCKETT, MR. PEARCE.

Instruction in this department is based upon the use of good text-books, supplemented by lectures or explanations in the class room and by practice in the field and testing laboratories, and in the drafting room. Many problems are assigned to the student in order that the underlying principles involved in their solution may be more thoroughly impressed upon him. Effort is made to develop appreciation of the degree of precision required in different kinds of work, and of the conditions under which approximate methods are desirable or admissible. Throughout the instruction work in this department a thorough understanding of the basic principles involved in a few fundamental engineering subjects is preferred to a more superficial introduction to many different subjects.

The courses are as follows:

1. Surveying, Leveling, and Topography. Sophomore. First term, 3 hours a week; with practice.

Description of the use and adjustment of the compass, transit, level and minor surveying instruments is followed by instruction in methods of field work, balancing surveys, computation of areas; profile leveling as applied to street grades, sewers, and ditches; topographic leveling with especial reference to problems in grading, drainage and irrigation; plotting and map drawing.

Text: Theory and Practice of Surveying, *Johnson.*

Practice, 4 hours a week.

Students are required to become thoroughly familiar with the construction, adjustment and use of the ordinary instruments; to perform field work, fully illustrating all points covered in the theory, and to make all calculations, and to prepare maps of the work done in the field.

Prerequisite, *Mathematics* 3.

(Required in Course IV.)

2. Surveying, Leveling, and Terracing. Junior. Second term, 3 hours a week; with practice.

In addition to the general principles of surveying, this course will give special attention to the application of these principles to agricultural problems. It is especially planned for those who wish to take up the questions of farm surveys, terracing, drainage, and irrigation. All the time possible will be devoted to such questions as the preservation of soil fertility and moisture on hill sides; drainage of low and swampy lands; principles and methods of irrigation. The text will be liberally supplemented by lectures and by the use of bulletins.

Text: Plane Surveying, *Barton.*

Practice, 4 hours a week.

The practice will follow the lines indicated by the theory. After the use of the instruments and the general methods of field work have been taught, special attention will be given to topographic leveling of a given area, preparation of contour map from original notes, designing a system of terraces for the area surveyed; similar problems for areas to be drained or irrigated, laying out of ditches and determining proper grade lines for them.

(Optional in Course I, Groups A, B.)

3. Surveying and Leveling. Junior. Second term, 2 hours a week; with practice.

This course is the same as course 1 with regard to the instruments and their uses. After the fundamental principles of surveying have been covered, special attention is paid to building and lot surveys, laying out plats, foundations, etc.

Text: Plane Surveying, *Barton.*

Practice, 2 hours a week.

The use of the instruments; field and drafting room work along the lines indicated in the theory.

Prerequisite, *Mathematics* 3.

(Required in Course V.)

4. Railroad Engineering. Sophomore. Second term, 3 hours a week; with practice.

Reconnaissance, preliminary and location surveys are discussed in the class room, with problems involving simple, compound and transition curves.

Text: Field Manual for Railroad Engineers, *Nagle.*

Practice, 4 hours a week.

Problems in simple, compound and transition curves are assigned and the curves run in the field.

Prerequisite, *Civil Engineering* 1.

(Required in Course IV.)

5. Railroad Engineering. Junior. First term. 2 hours a week; with practice.

Frogs and Switches; Railroad Construction and Maintenance.

Text: Field Manual for Railroad Engineers, *Nagle.*

Practice, 3 hours a week.

In practice a short railroad line is surveyed, grade lines laid, and slope stakes set. This is preliminary to the more elaborate field work of course 24.

Prerequisite, *Civil Engineering* 4.

(Required in Course IV.)

6. Mechanics of Materials. Junior. First term, 4 hours a week; with practice.

This course covers a treatment of the resistance of materials and the mechanics of pipes, riveted joints, beams, columns, shafts, etc. After the study of the elementary mechanics of these structures, attention is given to more advanced topics, such as combined stresses, compound beams and columns, resilience, impact, and fatigue of materials.

Text: Mechanics of Materials, *Merriman.*

Practice, 2 hours a week.

Determination of the strength, ductility, modulus of elasticity, and other properties of engineering materials. Various tests of timber, steel, cast iron, cement, etc., are made by the student and reports submitted showing results. In these reports considerable attention is given to the presentation of results in clear and condensed form by means of curves and tables.

Prerequisite, *Mathematics* 5.

(Required in Courses III, IV, V, VII, IX.)

6a. Mechanics of Materials. Junior. Second term, 2 hours a week; with practice.

An abbreviation of course 6.

Text: Mechanics of Materials, *Merriman.*

Practice, 2 hours a week.

Prerequisite, *Mathematics* 5.

(Required in Course VIII.)

7. Hydraulics. Junior. First and second terms, 2 hours a week; with practice.

The laws governing water at rest and in motion, as related to engineering problems. The flow of water in short tubes, pipes, mains, ditches, canals, sewers, streams and rivers; measurement of the flow of water, by nozzles, orifices, weirs, and meters; estimates for water supply, and water power; theory and efficiency of motors, wheels, turbines, rams, and pumps.

Text: Treatise on Hydraulics, *Merriman.*

Practice, second term, 2 hours a week.

Calibration of nozzles, orifices, water meters, weirs, and pressure gauges; efficiency tests on impulse motors, hydraulic rams, and centrifugal pumps of one, two, and three stages.

Prerequisite, *Mathematics* 5.

(Required in Course IV, Senior year in Course III, and without practice in Course VIII.)

8. Graphics. Junior. Second term, 4 hours a week. Practice.

Elements of Graphic Statics. Use of the force and equilibrium polygons. Determination of centers of gravity and moments of inertia of areas. Stress diagrams. The stresses in simple trusses are determined graphically.

Text: Roofs and Bridges, Part II, *Merriman and Jacoby.*

(Required in Course IV.)

9. Roads and Pavements. Junior. Second term, 2 hours a week.

This course covers a thorough study of country roads and a brief general study of city pavements; the character of materials and types of construction in different parts of the State and of the United States; the location and drainage of roads; road maintenance; road laws of Texas and of other States; road finances, organization, and supervision. The text is supplemented by lectures, the use of bulletins, road machinery, models, and samples of materials.

Text: Text-Book on Highway Engineering, *Blanchard and Browne.*
Prerequisite, *Civil Engineering* 1.
(Required in Course IV.)

10. Masonry Construction. Junior. Second term, 3 hours a week.

The principles of masonry construction in general, except as applied to reinforced concrete, are covered in this course.

Text: Treatise on Masonry Construction, *Baker.*
Prerequisite, *Civil Engineering* 6.
(Required in Course IV.)

11. Roofs and Bridges. Junior. Second term, 2 hours a week.

The stresses in ordinary roofs and bridges. Each student must determine analytically the stresses due to given loads in various structures, and the proper loading to produce the maximum stresses.

Text: Roofs and Bridges, Part I, *Merriman and Jacoby.*
Prerequisite, *Mathematics* 5; *Civil Engineering* 6.
(Required in Course IV.)

12. Stresses. Junior. Second term, 2 hours a week; with practice.

Stresses in simples structures.
Text: Graphic Statics, *Malcolm.*
Practice, 2 hours a week.
(Required in Courses III, VII, IX.)

13. Roofs and Bridges. Senior. First term, 4 hours a week; with practice.

The determination of stresses in the more complicated structures and the design of simple trusses.

Text: Roofs and Bridges, Parts I and III, *Merriman and Jacoby.*
Practice, First Term, 8 hours; Second Term, 4 hours a week.

The determination of stresses by various graphic methods followed by the design of a Parker truss; after the design, the student is required to make detailed drawings.

Prerequisite, *Civil Engineering* 11.
(Required in Course IV.)

14. Stresses. Senior. First term, 2 hours a week; with practice.

A continuation of course 12.
Text: Graphic Statics, *Malcolm.*
Practice, 2 hours a week.
Prerequisite, *Civil Engineering* 12.
(Required in Courses VII, IX.)

15. Water Supply Engineering. Senior. First term, 2 hours a week.

A general study of the sources of water supply for domestic use; the quantity and quality of a supply; the necessity for, and methods of, purification; collection, storage, and distribution of water; the construction and equipment of a complete system.

Text: Water Supply Engineering, *Folwell.*
Prerequisite, *Civil Engineering* 7.
(Required in Courses IV, VIII.)

16. Contracts and Specifications. Senior. First term, 2 hours a week.

A brief study of the law of contracts as applied to engineering operations; the relation of the engineer to the owner and to the contractor; the necessity for, and preparation of, engineering specifications and the accompanying documents; general and specific clauses in specifications; illustrative examples.
Text: Engineering Contracts and Specifications, *Johnson.*
(Required in Courses IV, V.)

17. Irrigation and Drainage. Senior. First term, 2 hours a week.

Hydraulic principles are applied in the course, and the methods of collecting and distributing water to lands under irrigation are discussed. Existing irrigation systems and methods are reviewed.
Text: Manual of Irrigation Engineering, *Wilson.*
Prerequisite, *Civil Engineering* 6.
(Required in Course IV.)

18. Reinforced Concrete. Senior. First term, 2 hours a week.

The theories of stress distribution, and various systems of reinforcement employed in the construction of beams, columns, arches, etc., are discussed, and illustrative examples studied.
Text: Principles of Reinforced Concrete Construction, *Turneaure and Maurer.*
Prerequisite, *Civil Engineering* 10.
(Required in Courses IV, VII.)

19. Field and Laboratory Work. Senior. First and second terms, 4 hours a week. Practice.

Practice in the field, drafting room and laboratory.
In the field and drafting room, the student is given practice in railroad maintenance of way and problems in street, road and railroad culvert design. In the laboratory the student continues the hydraulic practice of course 7, and makes various tests of road materials.
Prerequisite. *Civil Engineering* 5, 6, 7.
(Required in Course IV.)

20. Sewerage. Senior. Second term, 2 hours a week.

Questions relating to the amount of sewage, kind of system, design, construction, maintenance, and methods of sewage treatment and disposal, receive special attention in this course.
Text: Sewerage, *Folwell.*
Prerequisite, *Civil Engineering* 7.
(Required in Course IV.)

22. Higher Structures. Senior. Second term, 2 hours a week; with practice

The determination of stress in swing, cantilever, and suspension bridges, and in arches.

Text: Roofs and Bridges, Part IV, *Merriman and Jacoby.*
Practice, 2 hours a week.
Prerequisite, *Civil Engineering* 13.
(Required in Course IV.)

23. Higher Structures. Senior. Second term, 2 hours a week; with practice.

The determination of stresses in arches and domes.
Text to be assigned.
Practice, 2 hours a week.
The complete design of an arch rib.
Prerequisite, *Civil Engineering* 14.
(Required in Course VII.)

24. Field Practice. Summer Following the Junior Year.

A summer practice course. Effort is made to approximate the actual working conditions of preliminary and location railroad surveys. The class will be required to put in the full working day, and to complete exercises assigned in railroad and topographic surveying.

Text: Manual for Resident Engineers, *Molitor and Beard.*

Practice is also given in triangulation, river gauging, field work in road and street location and mapping.

At the close of the session 1914-15 this course will begin on Thursday, June 10 and close on Friday, July 9, 1915, both dates included. Students in this course will occupy rooms in the dormitories and will take their meals at the Mess Hall. Board and room, lights and janitor service will be charged for at the rate of $4.90 per week. For the present, there will be no laboratory fee.

(Required in Course IV.)

25. Modern Pavements. Senior. Second term, 3 hours a week.

A study of the general subject of streets and pavements; planning and locating streets with reference to contiguous property, proper drainage, ease of communication, amount and character of traffic; underground structures, subgrade, and foundations; principal types of wearing surfaces, including the cheaper bituminous mixtures; considerations governing the choice of a pavement; methods of distributing the cost of pavements; cleaning, maintenance, and repair.

Text: To be announced.
Prerequisite, *Civil Engineering* 9.
(Required in Course IV.)

FIFTH YEAR.

21. Least Squares and Geodesy. Second term, 3 hours a week.

Recitations, supplemented by field work on base line measurements, triangulation, etc., as available time will permit.

Texts: Least Squares, *Merriman.*
Geodesy, *Merriman.*
Prerequisite, *Mathematics* 5.
(Required in Course IV.)

31. Astronomy. First term, 2 hours a week.

This course is given in the fifth year for students receiving their Bachelor's degree prior to June, 1914. It embraces recitations and such field observations as the equipment and time available will permit.

Text: General Astronomy, *Young.*

(Required in Course IV.)

32. General Civil Engineering. First and second terms, 2 hours a week.

For fifth-year students receiving their Bachelor's degree prior to June, 1914. The subject offered will conform to the character of instruction best fitted for particular cases.

(Required in Course IV.)

SHORT WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY SURVEYORS.

The Department of Civil Engineering will, during the session 1914-15, offer a short course for public road supervisors, road overseers, county surveyors, and others interested in such work. This course will be open only to men over twenty-one years of age. No entrance examinations will be required, but it will be necessary for applicants to have a thorough working knowledge of arithmetic in order to carry the work to be given.

The course will cover the description and use of the transit, level, compass, and other simple surveying instruments; the elementary principles of land surveying; profile and topographic leveling and establishing grade lines for roads and ditches; the elementary principles of road location, grading, drainage, surfacing, and culverts; and the economic and social benefits of road improvement. The students will be divided into two classes, those having only a knowledge of arithmetic forming the first class, and those having a knowledge of algebra and trigonometry forming the advanced class. Regular lessons will be assigned in the text-books for daily recitations. Lectures will also be given by the Faculty and by prominent engineers in the State. Much practice work will be required in the field and in the drafting room. Road models will be studied and samples of road materials will be classified.

This course is designed exclusively for practical road men and surveyors who have never had college training. No college credit will be given for the course and no certificates of proficiency will be issued.

The course will begin Monday, January 4, 1915, and end Saturday, January 30, 1915. Rooms will be charged for at the rate of $1.00 per week to cover cost of light, heat, and janitor service. Meals will be furnished at the Mess Hall at twenty-five cents each, or $4.00 per week.

All students must register at the office of the Dean.

EQUIPMENT.

The department occupies a portion of the Civil Engineering Building and has three recitation rooms, two drafting rooms, library room, and three offices on the second floor. In the basement, the department has an instrument room, a general testing room, a hydraulic and road materials laboratory, a cement laboratory, a model room and store room.

For the field work, the equipment consists of a well assorted lot of transits and engineer's levels for general work, also for more precise work in city surveying and leveling and for simple triangulation. Also surveyor's compasses, terracing levels, plane tables, aneroid barometers, range poles, rods, chains, chain tapes, metallic tapes, surveyor's pins, axes, etc. For the drafting room and other office work there are drawing tables, reckoning machines, a universal drafting machine, planimeters, slide rules, calculating instruments, protractors for general and special uses, and a sufficient supply of T squares, etc.

In the general testing laboratory there is one machine of 100,000, one of 50,000 and one of 20,000 pounds capacity, a 50,000 inch-pounds torsion machine and a rattler for testing paving brick. With the exception of the 20,000 pound machine these are all power driven.

The Hydraulic Laboratory contains weirs, pressure gauges, hook gauges, water meters, measuring tanks, impulse wheels, hydraulic ram, centrifugal pumps, pitot tubes, current meter, nozzles, and other apparatus for hydraulic measurements. The centrifugal pumps are connected to a pressure tank in order that they may be forced to pump against various heads. The road materials testing laboratory contains sieves for examining gravel and machines for testing the hardness, working qualities, cementing values, etc., of materials suitable for road building.

In the cement laboratory are moulds for shaping briquettes for tension tests, moulds for compression tests, cement testing-machines, sieves for testing the fineness of cement and sand, Vicat and Gillmore's needles for testing time of setting, damp closet, balances, pans and other appliances used in testing the qualities of cements.

A road exhibit room is also maintained for the benefit of students and visitors. In this room are shown models of road sections and surfaces made of various materials available in Texas. Samples of gravel, rock, asphalt, and road soils, together with photographs, charts and maps of road work in the State complete the exhibit.

The department library and reading room contains engineering books, periodicals, blue prints, photographs, etc., and is kept constantly open for the use of students during the session.

COURSES IN ELECTRICAL ENGINEERING.

FOUR-YEAR COURSE.

The four-year course in electrical engineering is designed to give the student a thorough training in the underlying principles of direct and alternating current phenomena and of electric measurements. It provides training in subjects fundamental to the general practice of the engineering profession, in the theory of electricity and in the applications of the theory to practical problems in many branches of applied engineering.

The rapidly increasing number of electrical plants and circuits for power transmission, lighting, transportation, telephoning, and telegraphing demands men who are prepared to design, construct and operate them. The studies in the course outlined have been carefully selected with this demand in view.

At some time during the course students are given an opportunity to make a tour of inspection of some of the larger plants of the State.

A branch of the American Institute of Electrical Engineering has been organized among the students and affords the means of keeping students in touch with the latest development in the electrical field.

TWO-YEAR COURSE FOR ELECTRICIANS.

The course for electricians is as complete in both theoretical and practical training as is possible in two years. It is intended to be a thoroughly practical course, giving a familiarity with modern electric machines and their underlying principles.

The course gives ample preparation for many positions in the electrical industry, and has for its object the training of young men for positions in power, lighting and railway plants and telephone service and in other industries using electricity and electrical machines.

V.—COURSE IN ELECTRICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

Electrical Engineering 1 Electricity and Magnetism.	6	Electrical Engineering 2 Electrical Measurements.	2
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
Mathematics 4 Analytics.	6	Mathematics 5 Calculus.	6
Military Science 1 Drill Regulations.	2	Physics 7 Heat.	2
Language	3	Physics 8 Mechanics.	2
or History 2 English.	2	Language	3
		or History 2 English.	2
	19 *or* 20		17 *or* 18
Drawing 6	2	*Electrical Engineering* 2	4
Drawing 33	2	*Drawing* 6	4
Electrical Engineering 1	4	*Physics* 9	2
		Mechanical Engineering 15*a*	2
	8		12

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours. per week.
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
Civil Engineering 6 Mechanics of Materials.	4	Civil Engineering 3 Surveying and Leveling.	2
Electrical Engineering 3 Direct Currents.	3	Electrical Engineering 3 Direct Currents.	2
Mathematics 6 Practical.	2	Electrical Engineering 4 Electric Lighting.	1
Mechanical Engineering 3 Elementary Steam Engineering.	3	Electrical Engineering 12 Telephone Engineering.	2
Language	3	Electrical Engineering 13 El. Al. Currents.	2
or English 5 Argumentation.	1	Mechanical Engineering 4 Kinematics.	3
and Civil Engineering 7 Hydraulics.	2	Language	3
		or English 5 Argumentation.	1
		and Civil Engineering 7 Hydraulics.	2
	18		18
Chemistry 1a	2	*Chemistry* 1a	2
Civil Engineering 6	2	*Electrical Engineering* 3	4
Electrical Engineering 3	4	*Electrical Engineering* 12	2
Mechanical Engineering 19*a*	2	*Civil Engineering* 3	2
	10		10

SENIOR YEAR.

Electrical Engineering 8 Alternating Currents.	3	Electrical Engineering 8 Alternating Currents.	3
Electrical Engineering 9 Electrical Machine Design.	3	Electrical Engineering 9 Electrical Machine Design.	3
Electrical Engineering 10 Electric Railways.	2	Electrical Engineering 10 Electric Railways.	2
Civil Engineering 16 Contracts and Specifications.	2	Electrical Engineering 11 Electric Power Distribution.	2
Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Mechanical Engineering 5a Steam Engines and Boilers.	2	Mechanical Engineering 5a Steam Engines and Boilers.	2
		Military Science 2	1
	16		17
Electrical Engineering 8	4	*Electrical Engineering* 8	4
Electrical Engineering 9	4	*Electrical Engineering* 9	4
Mechanical Engineering 22*a*	2	*Mechanical Engineering* 22*a*	2
	10		10

TWO-YEAR COURSE FOR ELECTRICIANS.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year Course for Electricians the candidate must be at least sixteen years of age and be able to pass entrance examinations in English Grammar and Composition and in Algebra to simultaneous equations of the first degree, or must present a satisfactory certificate of proficiency in these subjects.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 9 Grammar and Composition.	3	English 9 Grammar and Composition.	3
Electrical Engineering 41 Electricity and Magnetism.	3	Electrical Engineering 42 Direct Currents.	3
Mathematics 13 Elementary Mathematics.	4	Chemistry 21 Practical.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mathematics 13 Elementary Mathematics.	3
		Mechanical Engineering 1 Elementary Mechanics.	2
	12		14
Drawing 1	2	*Chemistry* 21	2
Drawing 3	2	*Drawing* 1	4
Electrical Engineering 41	4	*Electrical Engineering* 42	4
Mechanical Engineering 13*a*	4	*Mechanical Engineering* 219	6
Mechanical Engineering 14*a*	4		
Mechanical Engineering 217	4		
	20		16

SECOND YEAR.

English 10 Rhetoric.	3	Electrical Engineering 45 Meters.	2
Electrical Engineering 43 Alternating Currents.	3	Electrical Engineering 46 Electrical Machinery.	5
Electrical Engineering 44 Wiring and Illumination.	4	Electrical Engineering 47 Spec. and Report Writing.	1
Mechanical Engineering 205 Engines, Valves and Indicators.	4	Mechanical Engineering 205 Boilers and Power Plants.	4
or Electrical Engineering 48... 4 Telephone Engineering.		*or* Electrical Engineering 48..4 Telephone Engineering.	
	14		12
Drawing 25	4	*Drawing* 25	4
Electrical Engineering 49	8	*Electrical Engineering* 49	8
Mechanical Engineering 222*a*	3	*Electrical Engineering* 50	3
		Mechanical Engineering 222*a*	3
		Mechanical Engineering 223*a*	2
	15		20

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR BOLTON, ASSOCIATE PROFESSOR LEAR,* ASSISTANT PROFESSOR WOOTEN, MR. NASH.

Instruction in Electrical Engineering is given by recitation, lecture, experiment, lantern illustrations, laboratory exercises, and individual conference. In most courses, some modern text-book is taken as a basis for study and the work broadened and explained by lectures and problems.

The laboratory practice is designed more firmly to impress the principles taught in class room, to familiarize the student with the practical operation of electrical apparatus, and to teach him to investigate for himself the characteristics of various types of machines. Reports are required on all experiments performed and the student learns to express thoughts concisely.

The courses are as follows:

1. Electricity and Magnetism. Sophomore. First term, 6 hours a week; with practice.

Lectures, recitations and problems in electricity and magnetism.

Prerequisite, *Physics* 3.

Practice, 4 hours a week.

This includes a laboratory investigation of the phenomena studied in the text-book.

(Required in Course V.)

2. Electrical Measurements. Sophomore. Second term, 2 hours a week; with practice.

Lectures and recitations on the theory, standardization and use of electrical measuring instruments, including galvanometers, bridges, voltmeters, ammeters, condensers, wattmeters, and recording instruments.

Prerequisite, *Electrical Engineering* 1, *Mathematics* 2, 3. Must be accompanied by *Mathematics* 5.

Practice, 4 hours a week.

This practice is intended to clarify the ideas received by the student in the class room. It includes the accurate measurements of various electrical quantities, such as resistance, inductance, capacity, and the effect of temperature, position, etc., on these quantities; a study of the various types of batteries to determine their adaptability to different uses; calibration and repair of instruments, such as ammeters, voltmeters, and wattmeters.

(Required in Course V.)

3. Direct Currents. Junior. First term, 3 hours, second term, 2 hours a week; with practice.

This course is devoted to the study of the theory and applications of direct currents and direct current machinery. Attention is given to modern machinery and its application. A short time is devoted to the study of the National Electric Code and modern methods of wiring.

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*Absent on leave.

Text: Elements of Electrical Engineering, volume I, *Franklin and Esty.*

Practice, 4 hours a week.

The practice is intended to give practical demonstration of the theory. It includes the operation of dynamos and motors, the determination of characteristics and the measurements and calculation of losses, efficiencies, and regulation. A practical study is also made of the various types of modern illuminants to determine reliability, efficiency, adaptability to various uses, etc.

Prerequisite, *Electrical Engineering* 2, *Mathematics* 5.

(Required in Course V.)

4. Electric Lighting. Junior. Second term, 1 hour a week.

Lectures and recitations on electric lighting units and illumination.

Prerequisite, *Electrical Engineering* 1.

(Required in Course V.)

5. Electrical Machinery. Junior. Second term, 4 hours a week; with practice.

Lectures and recitations on the operation and characteristics of dynamos, motors, transformers and other electrical appliances of the types most commonly met with in general engineering practice. This course is intended to give only a general idea of the subject. The course is intensely practical, only the more fundamental principles being studied in detail.

Practice, 3 hours a week.

The practice is designed to give the general engineering student some degree of familiarity with the operation and the more important characteristics of both direct current and alternating current machines.

Prerequisite, *Physics* 4, *Mathematics* 4.

(Required in Courses III, IV, VI, VIII.)

6. Lighting and Wiring. Junior. Second term, 1 hour a week.

Lectures and recitations on wiring for electric lighting. This includes a study of the National Electric Code of wiring with illustrations of how its requirements are carried out in practice. It is given to enable the architectural students to design and supervise wiring installations.

Prerequisite, *Physics* 4.

(Required in Course IX, and Senior year Course VII.)

8. Alternating Currents. Senior. First and second terms, 3 hours a week; with practice.

This course embraces a study of alternating currents and alternating current machinery, including methods of generation, transformation and use; a study of wave shapes and quantities affecting wave shapes; and the effect of balanced and unbalanced loads.

The subject is treated from both the graphical and the mathematical viewpoint, the text being supplemented by lectures and problems.

Text: Alternating Currents and Alternating Current Machinery, *Jackson.*

Practice, 4 hours a week.

The practical operation and determination of the characteristics of various types of alternating current machines.

Prerequisite, *Electrical Engineering* 3, 13.

(Required in Course V.)

9. Electrical Machine Design. Senior. First and second terms, 3 hours a week; with practice.

Lectures and recitations on the design of electrical instruments and machines.

Practice, 4 hours a week.

Practice in the design of lifting magnets, clutches, relays, dynamos and motors. Working drawings of some of the machines are required. Some time is devoted to the design of an electric power plant and distribution system. This includes bills of material, estimate of costs, etc.

Prerequisite, *Electrical Engineering* 3; to be accompanied or preceded by *Electrical Engineering* 8.

(Required in Course V.)

10. Electrical Railways. Senior. First and second terms, 2 hours a week.

This course embraces a study of railway apparatus, costs of construction and operation of electric railway systems, and operation methods. Students are required to make an engineering report on a small railway system, estimating cost of construction and operation and probable returns on investment.

Prerequisite, *Electrical Engineering* 3.

(Required in Course V.)

11. Electric Power Distribution. Senior. Second term, 2 hours a week.

Lectures and recitation on the transmission and distribution of power by electrical methods. Many subjects not treated in the text-books are studied and the student is encouraged to investigate all available sources for information.

This course must be accompanied or preceded by *Electrical Engineering* 3 and 8.

(Required in Course V.)

12. Telephone Engineering. Junior. Second term, 2 hours a week; with practice.

Lectures and recitations on telephone systems; their design, installation and management. This course includes a discussion of the relative advantages of the different types of telephones, and the faults and peculiarities met in each system.

Practice, 2 hours a week.

Practice in tracing of circuits, connection of instruments, measurement of constants, and location and remedy of faults and trouble in magneto, central energy and automatic telephone sets and systems.

Prerequisite, *Electrical Engineering* 2; to be preceded or accompanied by *Electrical Engineering* 3, 13.

(Required in Course V.)

13. Elementary Alternating Currents. Junior. Second term, 2 hours a week.

Lectures and recitations on the fundamental principles of alternating currents.

Prerequisites, *Electrical Engineering* 2, *Mathematics* 5.

(Required in Course V.)

FIFTH YEAR.

31. Advanced Alternating Currents. Fifth Year. First and second terms, 3 hours a week.

A study of alternating currents, including non-harmonic currents, transient currents, and allied phenomena.

(Required in Course V.)

32. Electric Machine Design. Fifth Year. First term, 3 hours a week.

This course consists of the design of some of the more complicated electric machines.

(Required in Course V.)

33. General Electrical Engineering. Fifth Year. First and second terms, 3 hours a week.

The instruction in this course will conform to the needs of the students taking the course.

(Required in Course V.)

34. Power Plant Design. Fifth Year. Second term, 3 hours a week.

A course of lectures dealing with the design and operating characteristics of modern electric power plants and their distributing systems.

35. Electrical Laboratory. Fifth Year. First and second terms, 8 hours a week. Practice.

The division of time in this course is intended to be somewhat flexible so that it may be made to fit the needs of the student taking the work. It will include laboratory investigations of various electric phenomena, such as those resulting from non-harmonic voltages, transient currents, etc. Much of this work will be done with the oscillograph.

This course will also include practice in the design of electric machines and of power plants.

TWO-YEAR COURSE FOR ELECTRICIANS.

First Year.

41. Electricity and Magnetism. First term, 3 hours a week; with practice.

A modification of course 1.

Practice, 4 hours a week.

Laboratory verification of the laws studied in the theory. The course also includes the use of instruments for the measurement of voltage, current, resistance, etc.

42. Direct Currents. Second term, 3 hours a week; with practice.

A modification of course 3.
Practice, 4 hours a week.

Second Year.

43. Alternating Currents. First term, 3 hours a week.

A study of alternating currents with particular emphasis laid on the practical application of the subject matter. As far as possible, the subject will be treated from the graphical viewpoint.

44. Wiring and Illumination. First term, 4 hours a week.

A study of rules and methods for exterior and interior wiring, including calculations for material to be used and estimates of costs.

The course also includes lectures and recitations on lighting and illumination with special emphasis on electric lighting. The practice for this course is included in course 49.

45. Meters. Second term, 2 hours a week.

A course covering the principles of operation, material of construction and methods of repair, test and calibration of electrical meters. This includes switchboard meters and watt-hour meters of various types.

Practice in the repair, calibration and test of meters is included in course 49.

46. Electrical Machinery. Second term, 5 hours a week.

A course covering the principles involved in the design and operation of electrical machinery. The course deals with transformers and both direct and alternating current motors and generators and the applications of each type of machine.

47. Specifications and Report Writing. Second term, 1 hour a week.

Lectures and recitations on forms of specifications and reports which are ordinarily used in electrical work. The student is required to present specifications covering various appliances and to make written reports so that he may learn to write a clear, concise technical report.

48. Telephone Engineering. First and second terms, 4 hours a week.

A course of lectures and recitations dealing with telephones and telephone systems. The course includes a study of the parts of telephones and switchboards, and of their combinations into complete systems; a study of combined telephone and telegraph systems; and a study of the methods of testing telephone lines and cables. The course also includes the design of a telephone system. *Optional.*

49. Electrical Laboratory. First and second terms, 8 hours a week. Practice.

Instruction and practice in testing electrical machines including generators, motors, transformers, meters, lamps, etc. The course will also include practice in laying out circuits and installing electric wires. This practice is intended to strengthen the theoretical courses and at the same time give the student a thoroughly practical knowledge of electrical appliances and methods.

This course will include practical experience in operating the electric machinery found in power plants.

50. Electrical Construction. Second term, 3 hours a week. Practice.

Instruction and practice in the construction and repair of electrical machines. This course is intended to familiarize the student with the interior construction of electric machines and to give him sufficient knowledge of materials and methods to enable him to make repairs in these machines.

51. Applied Electricity. First and second terms, 4 hours a week; with practice.

A course of instruction covering magnetism and electricity, magnetic circuits, direct and alternating currents, and direct and alternating current machines and their applications. The subject is treated from a practical standpoint.

Practice, 4 hours a week.

Electrical measurements and the experimental study of the construction and operating characteristics of electrical machinery.

(Required in Course for Power Plant Operators, Second Year.)

EQUIPMENT.

This department is well equipped with apparatus for lecture table experiments. There is a fine projection lantern for general projections of slides and a good supply of slides.

In the laboratory there is sufficient apparatus to enable the students in Electrical Engineering to become familiar with all the operations that will be required of them in the practice of their profession.

The electrical laboratory is equipped with direct and alternating current dynamos and motors, transformers, a station photometer, an illumination photometer, an oscillograph, transmission dynamometers, storage batteries, samples of the various modern electric illuminants, dark rooms, and a full line of measuring instruments, rheostats, resistances, etc.

Through the generosity of the Otis Elevator Company a complete motor driven elevator winding-engine equipment of the most modern type, complete with all automatic switches, regulators, controllers, etc., has recently been donated and has been installed in the laboratory for test and demonstration purposes.

The laboratory is also equipped with a number of frames of dynamos and motors and cores of transformers that are used by the students in learning to wind and repair these machines.

The telephone laboratory is equipped with numerous telephones and telephone parts, a manual switchboard for both central energy and magneto operation, a Strowger automatic switchboard with complete equipment for operation, and storage batteries, condensers, etc., for use with the various systems. The Bryan Telephone Company operates a complete telephone switchboard, which is used to give local and long distance telephone service from various stations on the campus. This exchange is available to the students in Electrical Engineering for test.

The equipment for the students in Electrical Engineering is augmented by the facts that the direct connected generators in the powerhouse, their exciters and measuring instruments, and the motors used to operate the Textile School laboratories are available for tests as practical operating plants after the students have performed the required experiments on the machines located in the laboratory.

Students are encouraged to read books relating to their work, and for this purpose the department library is available. The technical books in the general library are also available. A reading table is maintained on which are kept copies of a number of technical magazines.

By means of liberal donations from manufacturers of electrical supplies and apparatus an exhibit room is maintained wherein are shown samples of a great variety of electrical supplies.

The department possesses a complete wireless telegraph station of sufficient capacity to reach a number of commercial plants in the State. This equipment is available for study both from an engineering and an operating standpoint.

COURSES IN MECHANICAL ENGINEERING.

FOUR-YEAR COURSE.

The course in Mechanical Engineering is designed with a view of giving the student such training as will fit him to design, construct, and erect machinery, power plant equipment, etc., and to manage or to operate the same with the greatest economy of labor and materials.

It is not possible to give the student that skill in the shops and that experience in the laboratories which come with long service in practical work, but the aim is to give him the power to understand and apply the underlying principles which are involved in all problems met with in practical engineering.

When it is remembered that there is a steam power plant or other mechanical equipment connected with practically every industrial enterprise it is apparent that the graduates from the course in Mechanical Engineering should find a large field for their activities in the industrial development of the State. The training at College followed by a few years contact with the practical work should fit one to take charge of the operation or of the management of almost any industrial enterprise whether strictly mechanical engineering or involving other activities as well.

TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

In the Two-Year Course for Power Plant Operators, the Mechanical Engineering Department offers a short course for those men who are unable to take a full four-year course. Wherever it is possible for him to do so the student is urged to take the regular four-year course. This two-year course is particularly intended for the man who has been at work in a power house and who finds that he is handicapped by a lack of theoretical preparation or education, and who finds himself thus prevented from making reasonable advancement. It is assumed that he will enter upon this course with a very well defined idea of what he needs and with a determination to make the most of his opportunities. While the entrance requirements are made so low as to enable any deserving applicant to enter, any additional preparation or training he may possess will make it possible for him to better take advantage of the opportunities here given him.

The student completing this course should find ready employment in subordinate positions at the numerous power plants of the State and should rapidly develop to the more responsible operating positions.

III.—COURSE IN MECHANICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
Mathematics 4 Analytics.	6	Mathematics 5 Calculus.	6
Mechanical Engineering 3 Elementary Steam Engineering.	3	Mechanical Engineering 4 Kinematics.	3
Military Science 1 Drill Regulations.	2	Physics 4 General.	3
Physics 4 General.	3	Language	3
Language	3	*or* History 2 English.	2
or History 2 English.	2		
	19 *or* 20		17 *or* 18
Drawing 6	2	*Drawing* 6	4
Drawing 33	2	*Mechanical Engineering* 16	2
Mechanical Engineering 15	4	*Mechanical Engineering* 17	4
Physics 4	2	*Physics* 4	2
	10		12

JUNIOR YEAR.

First Term.	Hours per week.
Chemistry 1a Inorganic.	3
Civil Engineering 6 Mechanics of Materials.	4
Mathematics 6 Practical.	2
Mechanical Engineering 5 Steam Engines and Boilers.	3
Mechanical Engineering 6 Engineering Mechanics.	2
Language	3
or English 5 Argumentation.	1
and Mechanical Engineering 10 Graphic Statics of Machinery.	2
	17

Second Term.	Hours per week.
Chemistry 1a Inorganic.	3
Civil Engineering 12 Stresses.	2
Electrical Engineering 5 Electrical Machinery.	4
Mechanical Engineering 5 Steam Engines and Boilers.	3
Mechanical Engineering 6 Engineering Mechanics.	2
Language	3
or English 5 Argumentation.	1
and Mechanical Engineering 11 Pumping Machinery.	2
	17

Chemistry 1a	2
Civil Engineering 6	2
Mechanical Engineering 18	3
Mechanical Engineering 19	4
	11

Chemistry 1a	2
Mechanical Engineering 18	3
Mechanical Engineering 19	4
Electrical Engineering 5	3
Civil Engineering 12	2
	14

SENIOR YEAR.

Chemical Engineering 1 Industrial Chemistry.	3
Economics 4 Economic Organization.	3
English 6 Public Speaking.	1
Mechanical Engineering 7 Thermodynamics.	4
Mechanical Engineering 8 Eng. Design.	3
Civil Engineering 7 Hydraulics.	2
	16

Chemical Engineering 3 Metallurgy.	3
Economics 4 Economic Organization.	3
English 6 Public Speaking.	1
Mechanical Engineering 8 Eng. Design.	3
Mechanical Engineering 9 Gas Engines.	2
Mechanical Engineering 7 Thermodynamics.	2
Civil Engineering 7 Hydraulics.	2
Military Science 2	1
	17

Mechanical Engineering 20	2
Mechanical Engineering 21	4
Mechanical Engineering 22	4
	10

Mechanical Engineering 21	4
Mechanical Engineering 22	6
Civil Engineering 7	2
	12

TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year course for Power Plant Operators, the candidate must be at least sixteen years of age, and must be able to pass entrance examinations in English grammar and composition and in algebra to simultaneous equations of the first degree, or must present satisfactory certificate of proficiency in these subjects.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 9 Grammar and Composition.	3	Chemistry 21 Practical.	3
Mathematics 13 Elementary Mathematics.	4	English 9 Grammar and Composition.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mathematics 13 Elementary Mathematics.	3
Mechanical Engineering 205 Engines, Valves and Indicators.	4	Mechanical Engineering 1 Elementary Mechanics.	2
		Mechanical Engineering 205 Boilers and Power Plants.	4
	13		15
Drawing 1	2	*Chemistry* 21	2
Drawing 3	2	*Drawing* 1	4
Mechanical Engineering 13*a*	4	*Mechanical Engineering* 219	6
Mechanical Engineering 14*a*	4	*Mechanical Engineering* 222	3
Mechanical Engineering 217	4		
	16		15

SECOND YEAR.

Electrical Engineering 51 Applied Electricity.	4	Electrical Engineering 51 Applied Electricity.	4
Mechanical Engineering 200 Technical Literature.	2	Mechanical Engineering 200 Technical Literature.	2
Mechanical Engineering 208 General Mech. Engineering.	3	Mechanical Engineering 211 Pumping Machinery.	3
Mechanical Engineering 209 Internal Combustion Engines.	3	Mechanical Engineering 212 Refrigeration.	2
Mechanical Engineering 218 Machine Design.	3	Mechanical Engineering 218 Machine Design.	3
	15		14
Electrical Engineering 51	4	*Electrical Engineering* 51	4
Mechanical Engineering 218	3	*Mechanical Engineering* 218	3
Mechanical Engineering 219	4	*Mechanical Engineering* 220	3
Mechanical Engineering 222	3	*Mechanical Engineering* 223	4
		Mechanical Engineering 224	3
	14		17

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR FERMIER, PROFESSOR H. E. SMITH, MR. HERRINGTON, MR. CHAPPELLE, MR. BECHERT, *MR. L. B. MCMILLAN, MR. C. E. HANSON, MR. G. W. HANSON.

The work of this department is carried on in both class room and shop or laboratory, the two lines of work being designed to emphasize and reinforce each other.

In the shop practice the student works with woods and various kinds of metals; getting experience in the handling of tools and materials and acquiring a knowledge of the properties of materials by personal contact. Although he acquires a certain skill in the handling of tools, etc., yet the main result sought is not the training as a mechanic. Instead, it is expected that he will chiefly get the clear and definite ideas of the behavior of materials under the various technological processes which can be acquired only by personal contact and experience.

The class room work is taught by text-books, lecture and many numerical examples. The student is expected to understand the underlying principles and show their application in the solution and discussion of engineering problems of various sorts.

In the design rooms the instruction is given by lecture and reference books, together with practice, using the methods of drafting rooms of manufacturing concerns.

In the latter part of his course the student is expected to examine, operate, test and report on the various pieces of apparatus and equipment in the laboratory, shops and powerhouse.

The courses are as follows:

1. Elementary Mechanics. Freshman. First and second terms, 2 hours a week.

The work of this course consists of lectures, quizzes, and problems involving those principles of mechanics which are more commonly used in all branches of engineering.

No text-book is required, but each student is required to keep a note-book to contain the lectures and problems.

The second term's work must be preceded or accompanied by Mathematics 3.

(Required in all Engineering Courses.)

2. Shop Lectures. Freshman. First and second terms, 1 hour a week.

This course consists of lectures and quizzes (1) on hand and power tools and machines for working wood and metals, their construction, care and operation; (2) on the technological properties of materials of shop manufacture; and (3) on processes of manufacture.

No text-book is required, but a note-book is required for the lectures.

(Required in Courses III, IV, V, VI and VIII.)

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*Absent on leave.

3. Elementary Steam Engineering. Sophomore. First term, 3 hours a week.

This course aims to give the student such a knowledge of steam power plant equipment as will enable him to understand the operation of the same, and serve as a foundation for subsequent study and calculation along these lines. Valve gears, valve diagrams, and indicator practice are also included.

Text: Elementary Steam Engineering, *Spangler.*

Prerequisite, *Mathematics* 3, *Physics* 3, *Mechanical Engineering* 1.

(Required in Courses III and VI, also in the Junior year of Courses IV, V and VIII; also in the Junior and Senior year of Course VII.)

4. Kinematics. Sophomore. Second term, 3 hours a week.

Without taking account of the strength of the structure, this course takes up the study of velocity ratios, comparative forces, etc., in machines and their elemental parts.

Text: Machine Design, Part I, *Jones.*

Prerequisite, *Mathematics* 2.

(Required in Courses III, VI and the Junior year of Course V. Also optional in the Junior year of Course VIII.)

5. Steam Engines and Boilers. Junior. First and second terms, 3 hours a week.

A study of the generation of steam; the construction, operation, care, design and testing of boilers of various types, together with the design of chimneys and other means of producing draft; followed by a study of the elementary thermodynamics of the heat engine; also the machanics, construction, design and operation of the steam engine. Valve gears, indicators, governors, etc., are also studied.

Texts: Steam Boilers, *Parsons;* Steam Engines, *Creighton.*

Prerequisite, *Mathematics* 5, *Mechanical Engineering* 3, *Physics* 4; must be preceded or accompanied by *Chemistry* 1.

(Required in Course III, and in the Senior year of Course VIII.)

5a. Steam Engines and Boilers. Senior. First and second terms, 2 hours a week.

A briefer course than course 5, of which it is a modification.

(Required in Course V, optional in the Junior year of Course VI; also optional in the first term only of the Senior year of Course VII.)

6. Engineering Mechanics. Junior. First and second terms, 2 hours a week.

A study of pure mechanics as the foundation principles involved in the analytical solution of problems concerning the statics and dynamics of a material point and of a rigid body; with numerous numerical examples from practical engineering questions.

Prerequisite, *Mathematics* 5; must be preceded or accompanied by *Civil Engineering* 6.

(Required in Course III, and in the Senior year of Course VIII.)

7. Thermodynamics. Senior. First term, 4 hours a week, second term 2 hours a week.

This embraces a study of the effects of heat upon gases and the application of thermodynamic laws, and principles to the steam engine, gas engine, hot air engine, injectors, calorimeters, etc., together with a study of heat efficiencies of these machines and instruments.

Text: Applied Thermodynamics for Engineers, *Ennis.*

Prerequisite, *Mechanical Engineering* 5.

(Required in Course III.)

8. Engineering Design. Senior. First and second terms, 3 hours a week.

A study of the design of engines, pumping machinery, etc., from the standpoint of their strength, speed regulation, construction, and economical performance; also a study of the design of power plants, as to capacities and arrangements.

Prerequisite, *Mechanical Engineering* 6, 7; must be accompanied by *Mechanical Engineering* 21.

(Required in Course III.)

9. Gas Engines. Senior. Second term, 2 hours a week.

The application of the principles of thermodynamics to the design of gas engines. Also the study of the different cycles, methods of governing, and some details of construction of various types of gas engines and other internal combustion motors.

Text: The Gas Engine, *Jones.*

Prerequisite, *Mechanical Engineering* 7.

(Required in Course III.)

10. Graphic Statics of Machinery. Junior. First term, 2 hours a week.

A study of graphical methods of solving problems of the forces in machines in operation, including applied forces, friction forces, and transmitted forces as well as reactions.

(Optional in Course III.)

11. Pumping Machinery. Junior. Second term, 2 hours a week.

A study of different methods and machines used in pumping water.

(Optional in Course III.)

PRACTICE COURSES.

Note.—The mere completing of a certain set of exercises will not suffice in the shop practice courses. The student to receive credit for any course in shop practice will be expected also to be regular in attendance and to do creditable work.

13. Carpentry. Freshman. One term, 6 hours a week.

Shop practice in the use of common bench tools and power machinery for working in wood.

(Required in all four-year engineering courses except VII, IX.)

13a. Carpentry. Freshman. First term, 4 hours a week.

A modification of course 13.

(Required in Courses I, VII and in the first year of the two-year course in Textile Engineering.)

14. Forging. Freshman. One term, 6 hours a week.

Shop practice in the use of blacksmith and general forge tools in the working of iron and steel. Also tempering, annealing, welding, case-hardening, etc.

(Required in all four-year engineering courses except VII, IX.)

Note.—Courses 13 and 14 together constitute a year's work, 6 hours a week. The Freshman students in Courses III, IV, V, VI and VIII, will be divided into two groups at the beginning of the first term; one group will begin with course 13, and the other with course 14. At the beginning of the second term the groups will each change to the other work.

14a. Forging. Second term, 4 hours a week.

A modification of course 14.

(Required in Course VII and in the first year of the two-year course in Textile Engineering.)

15. Wood Turning. Sophomore. First term, 4 hours a week.

Instruction and shop practice in the use of wood turning tools for center, chuck and face-plate work.

(Required in Course III, in the Junior year of Course VIII, and in the second year of the two-year course in Textile Engineering.)

15a. Wood Turning. Sophomore. First term, 2 hours a week.

A modification of course 15.

(Required in Courses V, VI.)

16. Kinematic Drawing. Sophomore. Second term, 2 hours a week.

Practice in the construction of kinematic diagrams.

Must be accompanied by *Mechanical Engineering* 4.

(Required in Course III.)

17. Pattern Making and Foundry Work. Sophomore. Second term, 4 hours a week.

Shop practice in pattern making, molding, and casting in iron, brass, etc.

(Required in Course III.)

18. Machine Design. Junior. First and second terms, 3 hours a week.

This course consists of practice in the design of machine elements, and their proper representation by finished shop drawings.

Text: No text will be required, but each student is urged to secure a Kent's or a Suplee's hand-book.

(Required in Course III.)

19. Machine Shop Practice. Junior. First and second terms, 4 hours a week.

Practice in bench and machine-tool work in metals. This includes chipping, scraping, filing, babbiting, drilling, turning, boring, grinding, milling machine work, etc.

(Required in Course III.)

19a. Machine Shop Practice. Junior. First term, 2 hours a week.

A modification of course 19.

(Required in Course V.)

19b. Machine Shop Practice. Junior. One term, 4 hours a week.

A modification of course 19.

(Required in the first term of Course VI, and in the second term of the second year of the two-year course in Textile Engineering.)

20. Machine Shop Practice. Senior. First term, 2 hours a week.

A continuation of course 19.

(Required in Course III.)

21. Engineering Design. Senior. First and second terms, 4 hours a week.

Drawing room practice in the design of machines, and power plants.

Text: Hand-book, *Kent or Suplee.*

Must be accompanied by *Mechanical Engineering* 8.

(Required in Course III.)

22. Engineering Laboratory. Senior. First term, 4 hours; second term, 6 hours a week.

Instruction and practice in testing gauges, indicators, boilers, engines, etc., also a study of the actual mechanical operation of various machines.

In addition to the work with the apparatus, the student will be expected to make calculations and written reports on the investigations and the results obtained.

Text: Power Plant Testing, *Moyer.*

(Required in Course III.)

22a. Engineering Laboratory. Senior. First and second terms, 2 hours a week.

A modification of course 22.

(Required in Courses V and VIII, and in the first term only of Course IV.)

TWO-YEAR COURSES.

200. Technical Literature. First and second terms, 2 hours a week.

A study of magazines and papers covering the field of technical work, with special reference to current literature of Mechanical Engineering.

(Required in the second year of the Two-Year Course for Power Plant Operators.)

205. Steam Engines and Boilers. First and second terms, 4 hours a week.

A modification of course 5 specially planned for those taking the Two-Year Course for Power Plant Operators.

208. General Mechanical Engineering. First term, 3 hours a week.

A study of steam power plant equipment, including steam turbines, compound engines, auxiliaries, etc., and the general planning and arrangement of power plant equipment.

(Required in the Two-Year Course for Power Plant Operators.)

209. Internal Combustion Engines. First term, 3 hours a week.

In this course the student will study gas producers, and the various internal combustion motors, with special reference to their efficient performance and their troubles.

(Required in the Two-Year Course for Power Plant Operators.)

211. Pumping Machinery. Second term, 3 hours a week.

A modification of course 11, specially planned for the Two-Year Course for Power Plant Operators, in which course it is required.

212. Refrigeration. Second term, 2 hours a week.

A practical study of Refrigerating methods and machines.

(Required in the Two-Year Course for Power Plant Operators.)

218. Machine Design. First and second terms, 3 hours a week; with practice.

A study of the materials of machines, elements of strength of materials, elements of mechanism, principles of lubrication, commercial standards of machine supplies and parts. Also a study of the application of these to the design of machine elements and machines.

Practice, 3 hours a week.

Students will be given problems involving the principles taught in the class room, and will be required to make the calculations necessary for the design of machine elements or parts.

The student will also be given practice in the correct representation of the part designed by making commercial drawings of the parts and machines. So far as is practicable opportunity will also be given the student to make tracings and blue prints.

(Required in the Two-Year Course for Power Plant Operators.)

219. Machine Shop Practice. Second term, 6 hours a week, and first term of the next year, 4 hours a week.

A modification of course 19 specially planned for the Two-Year Course for Power Plant Operators, in which course it is required.

220. Machine Shop Practice. Second term, 3 hours a week.

A continuation of course 219, including tool making and tool dressing.

(Required in the Two-Year Course for Power Plant Operators.)

222. Engineering Laboratory Practice. Second term, 3 hours a week and first term of the succeeding year, 3 hours a week.

A modification of course 22 specially planned for the Two-Year Course for Power Plant Operators, in which course it is required.

222a. Engineering Laboratory Practice. First term, 3 hours a week.

A modification of course 222.
(Required in the Two-Year Course for Electricians.)

223. Power Plant Practice. Second term, 4 hours a week.

In this course the student will be required to serve as helper in the College power plant at duties which will give him an experience with practical operation.
(Required in the Two-Year Course for Power Plant Operators.)

223a. Power Plant Practice. Second term, 2 hours a week.

A modification of course 223.
(Required in the Two-Year Course for Electricians.)

224. Engineering Laboratory Practice. Second term, 3 hours a week.

This course is a continuation of course 222.
(Required in the Two-Year Course for Power Plant Operators.)

EQUIPMENT.

In the carpenter shop are excellent double work benches, equipped with quick-acting vises, and the saws, planes, chisels, etc., ordinarily found in a carpenter's kit. Supplementing these are a number of special tools in the tool room.

The wood turning equipment consists of a number of smaller lathes for the ordinary work, and a large pattern maker's lathe which admits of wide application. Besides the lathes there are band, jig and circular saws, planer and jointer, power driven, and grindstones for the students' use.

The forge room equipment consists of twenty-eight forges, all having power blast and exhaust, and eighteen hand forges, the necessary anvils, tongs, and other small tools usually found in the forge equipment.

In the machine shop the equipment is now very satisfactory. It consists of a full line of lathes, grinders, milling machines, etc., so that the student has an opportunity to learn how to operate the ordinary shop tools and machines. The equipment has been recently increased by the addition of four most excellent lathes and one automatic multiple spindle machine. One of the lathes is a most approved type of motor driven, geared-head precision machine; and is typical of the best of its kind. The automatic machine is one of the most highly specialized machines for the rapid production of duplicate small parts, and shows the student how such parts can be most cheaply made when the number needed warrants the employment of such means. The tool room contains a large assortment of drills, reamers, chucks, and other machine accessories, as well as the small tools for laying out work and accurately and properly measuring the same; calipers, micrometers, steel scales, punches, surface plates, etc.

The engineering laboratory contains steam engines, gasoline engines, steam turbines, steam and power pumps, fans, water motors, a hot-air engine, condensers, air pump, injectors and a full line of indicators, gauges, pyrometers, thermometers, tachometers, speed indicators, prony brakes, platform scales, etc., for conducting tests as outlined in course 22.

In addition, the laboratory has the use of all apparatus of the power plant, consisting of compound engines, Corliss and pumping engines of several different kinds; also the boilers of well-known makes and different types. The testing of these constitutes part of the course in Mechanical Engineering.

The new equipment of the steam plant adds larger engines, condensers, air compressor, air lift pump, etc.

For the class room instruction there are numerous full-size wooden models of different kinds of engines, also sections of actual air-brake equipment and other appliances and fittings for railway and power plant equipment.

Besides the above mentioned equipment might be mentioned the fact that manufacturers have in some instances deposited or donated for the use of the department a number of standard appliances, which prove valuable to the student.

COURSES IN TEXTILE ENGINEERING.

The object of these courses is to prepare young men for entering the field of textile manufacturing. The unprecedented development of the cotton milling industry in the South has brought about an era of prosperity and created a strong demand for educated young men in this industry. The State of Texas offers excellent advantages for the manufacture of cotton goods in its vast supply of raw material, intelligent labor, and excellent climatic conditions, and it is believed that cotton manufacturing will develop as rapidly as skilled and capable managers familiar with local conditions are to be had. The studies outlined have been selected with a view of giving theoretical and practical training in the manufacture of cotton goods as thorough as is possible with the time available.

VI.—COURSE IN TEXTILE ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2 Descriptive Geometry.	3	Drawing 2 Descriptive Geometry.	3
English 1 Rhetoric and Composition.	3	English 1 Rhetoric and Composition.	3
Mathematics 1 Solid Geometry.	3	Mathematics 2 Algebra.	3
Mathematics 2 Algebra.	3	Mathematics 3 Trigonometry.	3
Mechanical Engineering 1 Elementary Mechanics.	2	Mechanical Engineering 1 Elementary Mechanics.	2
Mechanical Engineering 2 Shop Lectures.	1	Mechanical Engineering 2 Shop Lectures.	1
Physics 3 Elementary.	2	Physics 3 Elementary.	2
	17		17
Drawing 1	2	*Drawing* 1	2
Drawing 3	2	*Drawing* 32	2
Mechanical Eng. 13 *or* 14	6	*Mechanical Eng.* 14 *or* 13	6
Physics 3	2	*Physics* 3	2
	12		12

SOPHOMORE YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 1a Inorganic.	3	Chemistry 1a Inorganic.	3
English 2 Literature.	2	English 2 Literature.	2
English 3 Composition.	1	English 3 Composition.	1
Mechanical Engineering 3 Elementary Steam Engineering.	3	Mechanical Engineering 4 Kinematics.	3
Military Science 1 Drill Regulations.	2	Physics 4 General.	3
Physics 4 General.	3	Textile Engineering 1 Designing.	3
Textile Engineering 1 Designing.	3	Language *or* History 2 ... 2 English.	3
Language *or* History 2 ... 2 English.	3		
	19 *or* 20		17 *or* 18
Chemistry 1a	2	*Chemistry* 1a	2
Drawing 6	2	*Drawing* 6	4
Drawing 33	2	*Textile Engineering* 1	2
Mechanical Engineering 15a	2	*Physics* 4	2
Physics 4	2		
	10		10

JUNIOR YEAR.

First Term.		Hours per week.	Second Term.		Hours per week.
Chemistry 4 Organic.		2	Electrical Engineering 5 Electrical Machinery.		4
Textile Engineering 2a Yarn Manufacturing.		6	Textile Engineering 5 Cotton Classing.		1
Textile Engineering 3 Designing.		3	Chemistry 4 Organic.		2
Textile Engineering 4 Cotton Classing.		1	Textile Engineering 2a Yarn Manufacture.		3
Textile Engineering 6 Power Weaving.		2	Textile Engineering 3 Designing.		3
Language		3	Textile Engineering 6 Power Weaving.		2
or English 5 Argumentation.	1		Language		3
and Mechanical Eng. 5a Steam Engines and Boilers.	2		*or* English 5 Argumentation.	1	
			and Mechanical Eng. 5a Steam Engines and Boilers.	2	
		17			18

Chemistry 4	2	*Chemistry* 4	2
Mechanical Engineering 19*b*	4	*Electrical Engineering* 5	3
Textile Engineering 2*a*	2	*Textile Engineering* 2*a*	4
Textile Engineering 6	4	*Textile Engineering* 6	4
	12		13

SENIOR YEAR.

Economics 4 Economic Organization.	3	Economics 4 Economic Organization.	3
English 6 Public Speaking.	1	English 6 Public Speaking.	1
Textile Engineering 7 Yarn Manufacture.	3	Textile Engineering 7 Yarn Manufacture.	3
Textile Engineering 8 Designing.	4	Textile Engineering 8 Designing.	4
Textile Engineering 9 Power Weaving.	2	Textile Engineering 9 Power Weaving.	2
Chemistry 12 Dyeing.	2	Textile Engineering 10 Yarn Manufacture.	2
		Textile Engineering 11 Mill Management.	2
		Military Science 2	1
	15		18

Chemistry 12	2	*Textile Engineering* 7	4
Textile Engineering 7	4	*Textile Engineering* 9	6
Textile Engineering 9	4		
	10		10

DEPARTMENT OF TEXTILE ENGINEERING.

PROFESSOR BAGLEY, ASSISTANT PROFESSOR TATUM.

The Legislature having made a liberal provision for the establishment of a Textile School as a department of the College, a suitable building of modern cotton mill construction has been erected, and an excellent equipment has been secured. The building offers excellent opportunities for the study of the details of mill construction.

The equipment has been carefully selected with a view of having a wide variety of the leading makes of cotton mill machinery represented. This will afford the student the opportunity of becoming familiar with such machinery as that with which he is likely to come in contact in the mills of the country.

Instruction will be confined to the manufacture of cotton goods and a thorough training will be given in the manufacture of many classes of cotton yarns and fabrics.

Instruction is given by the use of text-books, lectures, recitation and the practical operation of the machines in the actual production of yarns and fabrics.

The instruction in this department is divided into four sections, viz., Yarn Manufacturing, Weaving, Designing, and Chemistry and Dyeing. These subjects are so treated as to cover the manufacture of all classes of cotton yarns and fabrics.

A considerable amount of equipment has been added which is operated on a commercial basis. This offers an opportunity to the student to observe a cotton mill in operation, turning off a finished product. A part of the student's practice is to take charge of this machinery and put the stock through. This is entirely a new feature for a textile school and should increase the efficiency to a considerable extent.

The dye laboratory is a new addition and contains adequate machinery for instruction in dyeing and bleaching yarn and cloth.

The courses are as follows:

1. Designing. Sophomore. First and second terms, 3 hours a week; with practice.

This course includes the classification of fabrics; the elementary principles of fabric structure; the explanation of various technical terms applied to designs and fabrics; the representation of drawing-in drafts and harness chains; the design of fancy shirting, madrases, and dress goods, etc.

Practice, second term, 2 hours a week.

(Required in Course VI; without practice in the two-year course.)

2a. Yarn Manufacture. Junior. First term, 6 hours; second term, 3 hours a week; with practice.

Recitations on the machinery and processes in the manufacture of coarse cotton yarns. Instruction is given with a view of imparting a general knowledge of the machinery and processes, including the study of the raw material; mixing; mixing machinery; construction and operation of feeder and picking machinery, carding, drawing, slubbing, roving, ring spinning, spooling, reeling, and twisting; calculations to determine the necessary gearing to produce given numbers, speeds and production.

Practice, first term, 2 hours; second term, 4 hours a week.

(Required in Course VI.)

3. Designing. Junior. First and second terms, 3 hours a week.

A combination of course 1 and the design of lenos, two and three-ply fabrics, and pile fabrics. The course is supplemented by the practice in power weaving.

Prerequisite, *Textile Engineering* 1.

(Required in Course VI and in the two-year course.)

4. Cotton Classing. Junior. Second term, 1 hour a week.

This course offers instruction in judging and classifying cotton.

(Required in Course VI.)

5. Cotton Classing. Junior. Second term, 1 hour a week.

In addition to cotton judging and classing, instruction will include the ways of handling the crop from the field to the mill.

(Required in Course VI; and of Seniors in Course I, Groups A, B; and optional in Group C.)

6. Power Weaving. Junior. First and second terms, 2 hours a week; with practice.

Recitations and lectures on the construction, operation and adjustment of the plain and fancy looms; a study of the timing and setting of the various parts, and weave room calculations.

(Required in Course VI.)

Practice, 4 hours a week.

7. Yarn Manufacture. Senior. First and second terms, 3 hours a week; with practice.

Recitations and lectures; a continuation and more exhaustive treatment of the subjects of course 2. In addition the study of warp preparation and of the machinery necessary for the manufacture of fine cotton yarns, including the sliver lap machine, ribbon lap machine and comber, and a study of the spinning mule, organizations for the manufacture of all classes of yarns and the preparation of fancy warps.

Practice, 4 hours a week.

(Required in Course VI and in the two-year course.)

8. Designing. Senior. First and second terms, 4 hours a week.

Fabric analysis, including the dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, including the production of original designs, card cutting and lacing. This course is supplented by the production of dobby and Jacquard designs on power looms.

Prerequisite, *Textile Engineering* 3.

(Required in Course VI.)

9. Power Weaving. Senior. First and second terms, 2 hours a week; with practice.

Recitations and lectures on the construction, operation and adjustment of leno and Jacquard machines. A study of the different "tie-ups" used in Jacquard weaving. Sketching the most important motions on automatic and dobby looms.

Practice, first term, 4 hours; second term, 6 hours a week.

Prerequisite, *Textile Engineering* 4.

(Required in Course VI.)

10. Yarn Manufacture. Senior. Second term, 2 hours a week.

Recitations and lectures. The object here will be to present the work of the management of a plant in looking after the operation of the departments of the mill.

Prerequisite, *Textile Engineering* 2.

(Required in Course VI.)

11. Mill Management. Senior. Second term, 2 hours a week.

Lectures and recitations on the general management of cotton mills, including the study of fire protection, cost of production in the various departments, labor conditions and wages, care of mill and mill village.

(Required in Course VI and in the two-year course.)

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

First Year.

2b. Yarn Manufacture. First and second terms, 3 hours a week; with practice.

A modification of course 2a.

Practice, first term, 2 hours; second term, 4 hours a week.

6a. Weaving. First and second terms, 3 hours a week; with practice.

A modification of course 6.

Practice, first term, 4 hours; second term, 2 hours a week.

Second Year.

9a. Weaving. First term, 3 hours a week; with practice.

A modification of course 9.

Practice, first and second terms, 4 hours a week.

16. Designing. First and second terms, 1 hour a week.

Fabric analysis; including the dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, cutting cards from original designs.

17. Cotton Classing. First Year. First term, 2 hours a week. Practice.

The course covers the handling of the crop from the field to the mill; the method of establishing classes for cotton and their values, and practice in judging the value of samples.

(Required in the two-year course in Agriculture.)

EQUIPMENT.

The building itself is a modern cotton mill model and is equipped in general with an automatic system of sprinkler heads for fire protection. The building is heated with steam and the atmosphere is kept in ideal condition for the manufacturing of cotton by a system of humidifiers. The power is furnished by electric motors conveniently distributed over the building, while the shafting, pulleys and hangers serve as an example of standard construction of such things.

In the department of yarn manufacture there is every equipment necessary to produce carded or combed yarns and with it, machines for making chain or slashed warps of either single or double yarns.

In the weaving room there are ten hand looms for the weaving of short fancy patterns. There are fourteen Northrop looms, which are entirely automatic and two plain looms for ordinary plain goods. There are two ordinary dobby looms, with box motion to insert four colors for filling; one dobby loom for weaving terry towels; one dress goods loom, with dobby and boxes for making a seven-colored pattern; one loom for weaving narrow Jacquard dress goods, and one wide Jacquard loom for weaving table covers.

The finishing machinery is for ordinary ducks, sheetings or drills, and consists of an inspecting machine, railway sewing and rolling machine, a brushing and calendering machine, and a cloth-folding machine.

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year Course in Textile Engineering the candidates must be at least sixteen years of age and be able to pass entrance examinations in English Grammar and Composition and in Algebra to simultaneous equations of the first degree, or must present a satisfactory certificate of proficiency in these subjects.

PLAN OF THE COURSE.

The two-year course in Textile Engineering is intended for young men who wish to take up the work of cotton manufacturing and can not spend more than two years in preparation.

The aim of the course is to prepare young men for the responsible positions in a cotton mill after a short term of apprenticeship. Certificates will be given students who complete the work as outlined.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 9 Grammar, Composition.	3	English 9 Grammar, Composition.	3
Textile Engineering 1 Designing.	3	Textile Engineering 1 Designing.	3
Textile Engineering 2b Yarn Manufacture.	3	Textile Engineering 2b Yarn Manufacture.	3
Textile Engineering 6a Weaving.	3	Textile Engineering 6a Weaving.	3
	12		12
Drawing 23	1	*Drawing* 23	1
Drawing 24	2	*Drawing* 24	2
Mechanical Engineering 13*a*	4	*Mechanical Engineering* 14*a*	4
Textile Engineering 2*b*	2	*Textile Engineering* 2*b*	4
Textile Engineering 6*a*	4	*Textile Engineering* 6*a*	2
	13		13

SECOND YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 10 Composition, Rhetoric.	3	English 10 Composition, Rhetoric.	3
Textile Engineering 7 Yarn Manufacture.	3	Textile Engineering 3 Designing.	3
Textile Engineering 9a Weaving.	3	Textile Engineering 7 Yarn Manufacture.	3
Textile Engineering 3 Designing.	3	Textile Engineering 11 Mill Management.	2
Textile Engineering 16 Designing.	1	Textile Engineering 16 Designing.	1
	13		12
Drawing 25	4	*Drawing* 25	4
Mechanical Engineering 4	4	*Mechanical Engineering* 19*b*	4
Textile Engineering 7	4	*Textile Engineering* 7	4
Textile Engineering 9*a*	4	*Textile Engineering* 9*a*	4
	16		16

SUMMER SCHOOL OF COTTON CLASSING.

The sixth session of the Summer School of Cotton Classing of the Agricultural and Mechanical College of Texas will open June 15, 1914 and will continue six weeks.

The object of the course in Cotton Classing is to prepare young men for cotton buying and the running of cotton warehouses, and to offer to farmers the opportunity to increase their knowledge of the leading farm crop of Texas.

A study is made of the elements which determine the commercial grades of cotton, the influences which affect the price of cotton; the system of financing the crop from the field to the factory, and the relation of exchanges to the business in general. New samples are put each day on the cotton tables for practice, and the work is patterned somewhat after that of a cotton office.

The first hour each morning will be spent in the study of Miller's "American Cotton System," the Government's Report on "Cotton Exchanges" and other literature on the subject.

EXPENSES.

Registration fee	$ 7 50
Board at local hotel, per month	20 00
Room at local hotel, per month	8 00

The registration fee is in no case refunded.

EQUIPMENT.

Students in the Summer School will have the use of the library and reading room, and of the shower baths. Those interested will have the opportunity to inspect the College farm, sheds, barns, silos, dairy, creamery and experimental plots.

Instruction in Cotton Classing is given in the Textile Building and there the student can be shown the processes of manufacturing cotton and where the cotton goes.

The Government standards for classing cotton, which have been adopted by nearly all the leading exchanges with the exception of New York, will be used.

The State Experiment Station has in its cotton laboratory a fiber testing machine, showing the breaking strength of the individual fiber, and an instrument for measuring the length accurately. Demonstrations will be made showing the use and value of these machines.

FIFTH YEAR'S WORK IN ENGINEERING.

In the engineering courses a fifth year's work is offered to young men who have obtained the bachelor's degree in this College or other institution approved by the Faculty. The work of this year leads to the professional degree of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, or Textile Engineer. The instruction is entirely technical and consists of advanced work in various engineering subjects as shown in the tabular statement following. It is believed that the graduate will find it well worth while to take this work, either immediately after graduation, or after a year or more spent in active work; and that the wider acquaintance with engineering subjects, and the power of investigation so acquired will prove to be decidedly promotive of his professional advancement.

A thesis is required and must be typewritten and bound in a manner satisfactory to the head of the leading department in each course. No drill is required.

The curricula shown on the following pages are for students receiving their bachelor's degree prior to June, 1914.

The elective work is subject to the approval of the head of the leading department.

COURSE IN CHEMICAL ENGINEERING.

(Leading to the Degree of Chemical Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemical Engineering 11 Adv. Ind. Chemistry.	2	Chemical Engineering 11 Adv. Ind. Chemistry.	2
Chemical Engineering 12 Rarer Elements.	2	Chemical Engineering 13 Chem. Preparations.	2
Elective	6	Elective	6
Chemical Engineering 11, 12	16	*Chemical Engineering* 11, 13	16

COURSE IN CIVIL ENGINEERING.

(Leading to the Degree of Civil Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hour per week.
Civil Engineering (31) Astronomy.	2	Civil Engineering (32) General Civil Engineering.	2
Civil Engineering (11) Least Squares.	2	Civil Engineering (14) Contracts.	2
Civil Engineering (12) Bridge Designing.	3	Civil Engineering (11) Geodesy.	2
Civil Engineering (32) General Civil Engineering.	2	Civil Engineering (12) Bridge Designing.	3
Elective	6	Elective	6
Civil Engineering	8	*Civil Engineering*	8

COURSE IN ELECTRICAL ENGINEERING.

(Leading to the Degree of Electrical Engineer.)

(For students receiving their bachelor's degree after June, 1913.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Electrical Engineering 31 Advanced Alternating Currents.	3	Electrical Engineering 31 Advanced Alternating Currents.	3
Electrical Engineering 32 Electric Machine Design.	3	Electrical Engineering 34 Power Plant Designs.	3
Electrical Engineering 33 General Electrical Engineering.	3	Electrical Engineering 33 General Electrical Engineering.	3
Elective	6	Elective	6
Electrical Engineering 35	8	*Electrical Engineering* 35	8

COURSE IN MECHANICAL ENGINEERING.

(Leading to the Degree of Mechanical Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Mechanical Engineering Analytical Mechanics.	3	Mechanical Engineering Analytical Mechanics.	3
Mechanical Engineering Steam Turbines.	3	Mechanical Engineering Gas Producers.	3
Mechanical Engineering Refrigeration.	3	Mechanical Engineering Power Plants.	3
Elective	6	Elective	6
Mechanical Engineering	8	*Mechanical Engineering*	8

COURSE IN TEXTILE ENGINEERING.

(Leading to the Degree of Textile Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Textile Engineering (4) Yarn Manufacture.	3	Textile Engineering (4) Yarn Manufacture.	3
Textile Engineering (10) Weaving.	2	Textile Engineering (13) Designing.	4
Textile Engineering (13) Designing.	4	Textile Engineering (15) Mill Management.	2
Elective	6	Elective	6
Textile Engineering (4), (10)	8	*Textile Engineering* (4), (10)	8
Elective	2	*Elective*	2

General Studies

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

CHEMISTRY.

PROFESSOR HEDGES, ASSISTANT PROFESSOR GORDON, ASSISTANT PROFESSOR NELSON, MR. THORNTON, MR. NEWTON, MR. BRYANT.

The work in Chemistry begins in the Sophomore year of the courses in Agriculture and Chemical and Textile Engineering, and in the Junior year of all the other courses. A broad foundation is laid in the beginning course of General Inorganic Chemistry, which extends throughout the year, and is required in all courses. The remaining subjects described below include the work in Agricultural Chemistry and various special courses. •The advanced work of the students of Chemical Engineering is described under that course. Most of the work is given by lectures, illustrated by experiments, and supplemented by laboratory work, with frequent oral and written quizzes.

The courses are as follows:

1. General Inorganic Chemistry. First and second terms, 3 hours a week; with practice.

In this course the foundation principles of all chemical activity are fully discussed and demonstrated. The chemical elements and their compounds are then taken up separately and systematically. Industrial applications of the more important chemical processes are briefly described, and organic chemistry is touched upon. This course must precede all other chemical studies. A preliminary course in physics is prerequisite. Lectures, illustrated by experiments.

Text: General Chemistry, Theoretical and Applied, *Blake.*

Practice, 4 hours a week.

General laboratory work, duplication of lecture experiments, qualitative analysis, simple tests of technical importance.

(Required in Course VIII.)

1a. General Inorganic Chemistry. First and second terms, 3 hours a week; with practice.

The same as course 1, except as to amount of practice.

Practice, 2 hours a week.

(Required of Sophomores in Courses I, VI; of Juniors in Courses III, IV, V, VII, IX.)

2. Agricultural Chemistry. Junior. First and second terms, 3 hours a week.

This is a study of the fundamental chemical principles of agriculture, and in addition to giving the student a grasp of the application of chemistry to agriculture, it helps him to understand the chemical terms used in Experiment Station literature. The chemistry of plant growth, soils, irrigation water, fertilizers, feeding stuffs and animal nutrition are studied. Lectures.

Prerequisite, *Chemistry* 1a.

(Required in Course I.)

3. Agricultural Analysis. Junior. First term, 4 hours; second term, 2 hours a week. Practice.

This course serves to familiarize the student with the composition and behavior in the laboratory of many materials important in agriculture. It consists of a determination of the percentage of water and ash in various products, together with sugars, starch, crude fibre, fat, protein, potash and phosphoric acid.

Prerequisite, *Chemistry* 1a.

(Required in Course I.)

4. Organic Chemistry. Junior. First and second terms, 2 hours a week; with practice.

In this course the general principles and theories of organic chemistry, together with the general methods of preparation and synthesis of organic compounds are treated in detail. Special attention is given to compounds of technical importance, thus laying a foundation for work in dyeing, in agricultural chemistry, and in many processes of industrial chemistry. Lectures.

Text: Organic Chemistry, *Moore.*

Practice, 2 hours a week.

Preparation and properties of simple organic compounds; synthesis of complex organic substances.

Prerequisite, *Chemistry* 1, *or* 1a.

(Required in Courses VI, VIII, I Group D; optional in I Groups A, B, C.)

4a. Organic Chemistry. First and second terms, 2 hours a week; with practice.

A modification of Course IV, especially designed for Agricultural students.

Practice, 2 hours a week.

(Required in Course I, Group D; optional in Groups A, B, C.)

5. Geology. Junior. First term, 2 hours a week; with practice.

This course deals primarily with dynamic and structural geology, but historical geology is briefly considered. Special attention is given to the weathering of rocks and to the chemical explanations of many geological phenomena.

Text: An Introduction to Geology, *Scott.*

Practice, 2 hours a week.

The laboratory work in this course consists largely of determinative mineralogy and lithology, with special tests on coals, petroleums, and mineral waters.

Text: Tables for the Determination of Common Minerals, *Crosby.*

Prerequisite, *Chemistry* 1.

(Required in Course VIII.)

6. Advanced Agricultural Analysis. Senior. First and second terms, 2 hours a week; with practice.

In this work the methods of exact analysis are discussed in the lectures and, so far as time allows, applied in the laboratory. The official methods of analysis are used throughout the work; but other methods are frequently used for comparison. It supplies a working basis for course 8, or any further study of agricultural chemistry.

Practice, 6 hours a week.

Prerequisite, *Chemistry* 2.

(Required in Course I, option 2, Groups A, B, C.)

7. Physical Chemistry. Senior. First term, 2 hours a week; with practice.

This is an elementary course, emphasizing the phenomena which show the state of substances in solution. Lectures.

Practice, 4 hours a week.

Molecular weight determinations by vapor-density and freezing-point methods; electrical conductivity; migration of ions and of colloids; osmosis.

Prerequisite, *Chemistry* 4.

(Required in Course I, option 2, Groups A, B, C.)

8. Advanced Agricultural Chemistry. Senior. Second term, 2 hours a week; with practice.

Studies of selected topics concerning the chemistry of soils, plants, or animal nutrition, in such a way as to give the student a knowledge of the methods used in agricultural investigation, and to aid him to develop habits of independent thought.

Bulletins, scientific journals, lectures.

Practice, 4 hours a week.

The student is expected in this work to take up some special problem in agricultural chemistry, or to work on the chemical phase of some problem simultaneously pursued in some other department.

Prerequisite, *Chemistry* 7.

(Required in Course I, option 2, Groups A, B, C.)

9. Dairy Chemistry. Senior. Second term, 2 hours a week; with practice.

The object of this course is to study the composition of milk and the principal chemical changes that take place in the handling of it, and in its manufacture into butter and cheese. It includes the analysis of cream, butter and cheese; the testing for adulterants; sanitary conditions necessary for creamery work, and influences of different feeds on the quality of dairy products.

Practice, 6 hours a week.

(Required in Course I, Group D.)

10. Geology. Senior. Second term, 4 hours a week; with practice.

This course consists of a study of dynamic, structural, and economic geology, with emphasis on the non-metallic minerals—coal, petroleum, building stones, clay, lime and cement, gypsum, abrasives and road materials.

Texts: College Geology, *Chamberlin and Salisbury;* Economic Geology, *Ries.*

Practice, 2 hours a week.

Largely determinative mineralogy and lithology, with special tests on some of the non-metallic minerals.

Text: Tables for the Determination of the Common Minerals, *Crosby.*

Prerequisite, *Chemistry* 1a.

(Required in Courses IV, VII, IX.)

11. History of Chemistry. Senior. Second term, 1 hour a week.

This course puts the development of chemical theories in their historical setting and gives an intimate acquaintance with the lives of great chemists.

Prerequisite, *Chemistry* 7, or *Chemical Engineering* 4, first term.

(Required in Course VIII.)

12. Dyeing. Senior. First term, 2 hours a week; with practice.

This course consists of a study of the physical and chemical properties of textile fibres, dyes, dyestuffs and mordants, together with the principles and appliances involved in the commercial coloring of textiles, especially cotton and woolen goods. Lectures.

Practice, 2 hours a week.

All the principles discussed in the lectures are tested in the laboratory, with especial attention to the production of dyeing to meet particular commercial requirements.

Prerequisite, *Chemistry* 4.

(Required in Course VI.)

20. Practical Chemistry. First and second terms, 3 hours a week; with practice.

This course is intended to familiarize the student with the facts underlying the more important chemical processes involved in agricultural operations, such as fertility of soils, plant growth and the digestibility of feeds. The elementary principles of inorganic chemistry are first considered. This is followed by a detailed description of the composition of most of the common foods and feeds, and a study of the conditions affecting their composition during growth. A study of the rational feeding of men and animals completes this course. Lectures, recitations and quizzes.

Text: Chemistry of Plant and Animal Life, *Snyder;* Soils and Fertilizers, *Snyder.*

Practice, 2 hours a week.

Most of the principles discussed in the lectures are confirmed by the student in the laboratory.

(Required in the two-year course in Agriculture.)

21. Practical Chemistry. Second term, 3 hours a week; with practice.

The course is intended to familiarize the engineering student with Chemistry and its relation to daily life. The elementary principles of inorganic chemistry are first considered. This is followed by the study of the composition and relation of chemistry to the following materials: Carbon and its compounds, glass, cement, alloys, paints, oils, varnishes, leather, silk, wool, cotton, rubber, soils, fertilizers, and insecticides. Lectures, recitations and quizzes.

Text: Chemistry and Its Relation to Daily Life, *Kahlenberg and Hart.*

Practice, 2 hours a week.

(Required in the two-year courses for Electricians and for Power Plan Operators.)

EQUIPMENT.

The department has the usual laboratory facilities, including a vacuum system for rapid filtration, a compressed-air system for use with blast lamps and a ventilating system. The laboratories are supplied with hydrant, cistern and distilled water. Each student is assigned to a lock-desk containing the necessary equipment. The large lecture room, with raised seats, has a seating capacity of one hundred. The museum occupies a large, well-lighted room. The department has a good reference library.

DEPARTMENT OF DRAWING.

PROFESSOR A. MITCHELL, ASSISTANT PROFESSOR GEIST, MR. REDLICH, MR. MANSFIELD.

Instruction in Drawing and Descriptive Geometry is given with three objects in view: First, to train the student by developing his powers of observation and imagination; second, to provide a basis for further instruction in other departments; and, third, to prepare the student for professional work as a draftsman.

The department is equipped with the necessary tables, models and reference books.

The courses are as follows:

1. Mechanical Drawing. Freshman. First and second terms, 2 hours a week. Practice.

Use and care of drawing instruments, instrumental drawing, free-hand and mechanical lettering, geometrical constructions, projections, intersections, developments, axonometry, shades and shadows and perspective.

Text: Mechanical Drawing, Parts I and II, *Giesecke.*

(Required in all Engineering courses.)

2. Descriptive Geometry. Freshman. First and second terms, 3 hours a week.

Problems relating to the point, line, plane and solids; problems in tangency and intersections, in shades and shadows and in perspective.

Text: Descriptive Geometry, *Giesecke.*

(Required in all Engineering courses.)

3. Freehand Drawing. Freshman. First term, 2 hours a week. Practice.

Drawing from geometrical solids, common objects, plaster casts, and still life, to study form, proportion, light and shade.

(Required in all four-year courses.)

31. Freehand Drawing. Freshman. Second term, 2 hours a week. Practice.

Drawing of farm tools, implements and structures, and objects from plant and animal life. Elementary water color.

(Required in Course I.)

32. Freehand Drawing. Freshman. Second term, 2 hours a week. Practice.

Drawing of machines, machine parts, engineering structures, details.

(Required in all Engineering courses except VII, IX.)

33. Freehand Drawing. Sophomore. First term, 2 hours a week. Practice.

A continuation of course 32 with special attention to measuring objects and dimensioning drawings.

Prerequisite, *Drawing* 32.

(Required in all Engineering courses except VII, IX.)

6. Mechanical Drawing. Sophomore. First term, 2 hours; second term, 4 hours a week. Practice.

Working drawings of elementary parts of machines and engineering structures, tracing and photo printing.
Text: Mechanical Drawing, Part III, *Giesecke.*
Prerequisite, *Drawing* 1.
(Required in all Engineering courses except VII, IX.)

9. Topographical Drawing. Junior. First term, 2 hours a week. Practice.

Topographic signs, topographic maps and out-door sketching.
Prerequisite, *Drawing* 6.
(Required in Course IV.)

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

First Year.

23. Freehand Drawing. First and second terms, 1 hour a week. Practice.

Drawing from geometrical solids and common objects to study form and proportion.

24. Mechanical Drawing. First and second terms, 2 hours a week. Practice.

Use and care of drawing instruments, instrumental drawing, freehand and mechanical lettering, and geometrical constructions.
Text: Mechanical Drawing, Part I, *Giesecke.*

Second Year.

25. Mechanical Drawing. First and second terms, 4 hours a week. Practice.

Working drawings of elementary parts of machines and engineering structures, tracing and photo printing.
Text: Mechanical Drawing, Part III, *Giesecke.*
Prerequisite, *Drawing* 24.

DEPARTMENT OF ENGLISH.

PROFESSOR FOUNTAIN, ASSISTANT PROFESSOR THOMAS, MR. BRESSLER,
MR. COFER, MR. GUNTER, MR. CLICK, MR. POWELL,
MR. CHANDLER, MR. WILSON.

The aim of this department is to give students such training as will enable them to use their mother tongue readily and accurately. The instruction, therefore, is practical rather than theoretical. Frequent written exercises are required, and these exercises are not only carefully read by the instructor, but are also discussed in personal conferences with the individual student. In this way each student has his attention called to his most frequent errors; and suggestions, especially adapted to his needs, are made. Experience has proved that a student often gets more benefit from a fifteen minutes' personal conference with an instructor than he does from an hour's lecture in the class room.

The courses are as follows:

1. Rhetoric and Composition. Freshman. First and second terms, 3 hours a week.

This course involves recitations, readings from masterpieces of literature, composition writing, and personal conferences at hours to be arranged with the instructors.

(Required in all four-year courses.)

2. English Literature. Sophomore. First and second terms, 2 hours a week.

This course affords an opportunity for the student to obtain a general knowledge of the outline of English Literature, the different stages of development being illustrated by the critical reading of a classic of each period. Students are also required to do a large amount of reading outside of the class room and to submit written reports on what they read.

Prerequisite, *English* 1.

(Required in all four-year courses.)

3. English Composition. Sophomore. First and second terms, 1 hour a week.

This course is intended to give practice in organizing and writing longer themes than are required in course 1. In addition to weekly compositions, the work involves recitations and personal conferences.

Prerequisite, *English* 1.

(Required in all four-year Engineering courses.)

4. Advanced Composition. Junior. First and second terms, 3 hours a week.

This course will involve continual practice in writing, and a study of modern English literature illustrating the principal kinds of prose composition. Personal conferences with the instructor will be required.

Prerequisite, *English* 1.

(Required in Course I.)

5. Argumentation. Junior. First and second terms, 1 hour a week.

This course will involve a study of the essentials of argumentation, and practice in drawing briefs.

(Required in all four-year Engineering courses.)

6. Public Speaking. Senior. First and second terms, 1 hour a week.

The aim of this course is to help the student to a simple, direct manner of speaking. The work consists of the oral interpretation of some of the best orations, writing and delivering original pieces, and debating. Personal conferences with the instructor are required.

(Required in all four-year courses.)

TWO-YEAR COURSES.

First Year.

9. Grammar and Composition. First and second terms, 3 hours a week.

This course includes a rapid but thorough review of the essentials of English Grammar, composition writing, and personal conferences with instructors.

Second Year.

10. Composition and Rhetoric. First and second terms, 3 hours a week.

In this course the written exercises are longer and on more difficult subjects than those of course 9. Especial attention is given to expository and argumentative composition, and to business correspondence. Parallel reading is required in both courses.

DEPARTMENT OF HISTORY AND ECONOMICS.

HISTORY.

PROFESSOR CHASTAIN, MR. ABSHIRE.

It is the aim of this department to have the student learn that history deals with the life of a nation in the process of growth; that the content of history is not a dead thing, but that it lives and moves; that it is dynamical and not statical; that it obeys the law of continuity; that there are no breaks or leaps; that development may hasten or may slacken, but that it is always continuous, and that the operation of the law of continuity makes history a unit. The study of the life of any people reveals certain characteristics common to the history of all civilized nations; there will be found five well marked phases—a political, a religious, an educational, an industrial, and a social phase. The student should understand that history is one continuous current moving on toward one purpose—not one destiny for government, another for church, and so on, but that all these make one life with one destiny. The student is encouraged to trace all these lines of growth, taking each great event and each series of events, discovering to what extent all institutions are affected.

Students are urged to make constant use of the College library, which contains a great many histories and biographies from which they may be able to pursue a systematic investigation for themselves.

The courses in history are as follows:

1. English History. Freshman. First and second terms, 3 hours a week.

This course traces the outline of English History from the earliest times to the present. In addition to the political history of England, the development of governmental institutions and the condition of the Church will receive some attention.

Texts: A History of Great Britain, *Tout;* Atlas of English History, *Gardiner.*

(Required in Course I.)

2. English History. Sophomore. First and second terms, 2 hours a week.

Similar to course 1, but more comprehensive.

Texts: A History of Great Britain, *Tout;* Source Book, *Lee;* Atlas of English History, *Gardiner.*

ECONOMICS.

*ASSOCIATE PROFESSOR LEAVELL, ACTING ASSOCIATE PROFESSOR KIBLER.

The courses in economics have three objects. The student is expected to gain:

(1) An intelligent appreciation of the significant facts in the economic life of his own day.

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*Absent on leave.

(2) A method for getting an accurate knowledge of economic problems, or others, as they may arise in his later experience.

(3) An understanding of some of the ways by which the informed and public-spirited citizen may help his community in the solution of such problems.

The emphasis of the courses is upon modern organization and current problems, but history and theory will receive enough attention to make clear how the present order has grown out of past conditions, and to reveal the essential principles underlying the modern organization, so far as those principles are understood. The standpoint of the courses is economic efficiency.

The courses in economics are as follows:

3. Economic Organization and Theory. Senior. First and second terms, 3 hours a week.

This course considers the following topics: Natural resources as agents in production, conservation of natural resources, labor problems, money, banking and rural credits, co-operation in agriculture with especial reference to marketing, rural economics, problems of rural life, and a brief resume of industrial evolution and economic theory.

Texts to be assigned.

(Required in Course I.)

4. Economic Organization and Theory. Senior. First and second terms, 3 hours a week.

This course considers the following topics: Natural resources as agents in production; conservation of natural resources; scientific management of labor; labor problems; money and banking: business organization, especially as illustrated by corporations and transportation; and a brief resume of industrial evolution and economic theory.

Texts to be assigned.

(Required in all four-year Engineering courses.)

DEPARTMENT OF MODERN LANGUAGES.

It is the object of the department to impart a practical knowledge of French, German, or Spanish, such as will benefit the student in the prosecution of a scientific career.

To this end, the text-books used and the method of imparting instruction are practical. French and German are taught because neither the specialist nor the general student can afford to be ignorant of those literatures; Spanish is taught in view of the rapidly growing intercourse between us and the Latin republics south of us.

Students coming to us, therefore, from the high schools of the State find here the opportunity to continue their linguistic studies by the side of agriculture and mechanical branches to which those studies lend effective aid.

The courses are as follows:

1. French. First and second terms, 3 hours a week.

A thorough drill in the elements of language, its pronunciation, its grammatical forms, is given through oral and written exercises. The reading of simple text is undertaken as early as possible.

2. French. First and second terms, 3 hours a week.

Course 1 is continued and the reading gradually adapted to the scientific work of other departments. The speaking of the language is encouraged.

3. German. First and second terms, 3 hours a week.

The student is drilled on grammatical forms, the grammar of the word and sentence, and introduced to the simpler written and spoken language.

4. German. First and second terms, 3 hours a week.

Course 3 is continued with a view to reading the scientific literature bearing on the work in other departments.

5. Spanish. First and second terms, 3 hours a week.

The grammar of Spanish, with simple reading as early as possible.

6. Spanish. First and second terms, 3 hours a week.

Advanced grammar, written and oral exercises. Scientific texts for reading.

DEPARTMENT OF MATHEMATICS.

PROFESSOR PURYEAR, ASSOCIATE PROFESSOR R. F. SMITH, ASSISTANT PROFESSOR J. W. MITCHELL, ASSISTANT PROFESSOR MICHIE, ASSISTANT PROFESSOR GARNER, MR. JONES, MR. NICHOLS, MR. BOND.*

Instruction in this department is given by the use of approved text-books, supplemented by oral explanations and informal lectures. The student's knowledge of the subject is tested daily at the blackboard, and in each course written solutions of selected problems and review exercises involving the work of preceding courses are frequently assigned. Prominence is given to practical applications.

The courses are as follows:

1. Solid Geometry. Freshman. First term, 3 hours a week.

The course will include definitions, lines and planes in space, dihedral angles, polyhedral angles, polyhedrons, the cylinder, cone and sphere.

Text: Solid Geometry, *Wentworth-Smith.*

(Required in all four-year Engineering courses.)

2. Algebra. Freshman. First and second terms, 3 hours a week.

This course will include graphs, quadratic equations, ratio, proportion, variation, arithmetical progressions, geometrical and harmonical progressions, permutations, combinations; limits, undetermined coefficients, partial fractions, binomial theorem, logarithms, logarithmic and exponential series, and such other topics as the time may allow.

Text: Complete Secondary Algebra, *Fisher* and *Schwatt.*

(Required in all four-year Engineering courses.)

3. Plane Trigonometry. Freshman. Second term, 3 hours a week.

This course will include goniometry, review of logarithms, solution of right triangles, problems of heights and distances, properties of triangles, solution of oblique triangles, geometrical applications.

Text: Plane and Spherical Trigonometry, *Taylor* and *Puryear.*

(Required in all four-year Engineering courses.)

4. Analytics. Sophomore. First term, 6 hours a week.

The course will include the straight line, transformation of coordinates, circle, ellipse, hyberbola, the general equation of the second degree, solid analytic geometry.

Text: Analytic Geometry, *Nichols.*

(Required in all four-year Engineering courses except VI.)

Prerequisite, *Mathematics* 1, 2, 3.

5. Differential and Integral Calculus. Sophomore. Second term, 6 hours a week.

The course will include differentiation, expansion of functions, indeterminate forms, functions of several variables, tangent and normal, curvature, maxima and mimima; integration, lengths, areas, volumes, moments of inertia; centres of gravity.

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*Absent on leave.

Text: Differential and Integral Calculus, *Osborne.*

(Required in all four-year Engineering courses except VI.)

Prerequisite, *Mathematics* 4.

5a. Differential and Integral Calculus. Second term, 3 hours a week.

This course will include the same topics as course 5. With the consent of the head of the department, students who have had that course through the term may take course 5a. Such students may remove a deficiency in course 5 by passing course 5a.

6. Practical Mathematics. Junior. First term, 2 hours a week.

Applications of the Calculus to engineering problems.

Text: Practical Mathematics, *Saxelby.*

(Required in Courses III, IV, V, VIII.)

Prerequisite, *Mathematics* 5.

11. Plane Geometry. Freshman. First and second terms, 3 hours a week.

The course will include definitions, rectilinear figures, the circle, similar polygons, areas of polygons, regular polygons, measurement of the circle.

Text: Plane Geometry, *Wentworth-Smith.*

(Required in Course I.)

13. Elementary Mathematics. First term, 4 hours a week; second term, 3 hours a week.

Elementary Algebra, Plane Geometry, Plane Trigonometry. Problems are taken from practical work, and correlated with instruction given in other subjects.

(Required in the two-year courses for Electricians and for Power Plant Operators.)

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

LIEUTENANT BROWN.

The object of the military instruction given at this College is to develop the student physically by the systematic drill and exercise; to inculcate in students that unhesitating and subconscious obedience to constituted authority so essential to good citizenship; to qualify students to be company officers of volunteers or Militia.

Graduates of this College may be given the opportunity by the War Department of taking the competitive examination for commissions as second lieutenant in the regular army; and their services are in demand as officers in the organization of native troops in the Philippine Islands.

The Cadet Corps, which includes all students in attendance at the College, is organized as a regiment of infantry, consisting of band and three battalions of four companies each. All military instruction is under the immediate charge of the Commandant.

The officers and non-commissioned officers are selected from the Senior, Junior and Sophomore classes. They are appointed by the Commandant upon the approval of the President. Their appointments are dependent upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

The Military system regards a man for his inherent qualities of manhood and encourages ambition and self-reliance; it is an aid in the enforcement of discipline and encourages regularity in attendance upon academic duties; it tends to develop that sense of duty and honor that mark a man as a gentleman.

The courses are as follows:

1. Drill Regulations. Sophomore. First term, 2 hours a week.

The course includes infantry drill regulations through the schools of the soldier, company, battalion and regiment, both in close and extended order; reviews, inspections, parades, guard mounting, guard duty, small arms firing regulations, field service regulations and instruction in making out military records. It includes talks and lectures upon tactics, marching, camping, sanitation and modern firearms.

2. Military Science. Senior. Second term, 1 hour a week.

This course includes the study of Military Campaigns, in which the class is given lessons and required to stand a written examination. In connection with the lessons given to the class, the instruction also includes lectures upon organization, marches, discipline, rations, map reading, shelter trenches, duties of a company commander, and a resume of the military history, the military system, and of the military policy of the United States.

3. All Classes. First and second terms, 3 hours a week.

Infantry drill through the schools of the soldier, company, battalion and regiment in close and extended order, advance and rear guard, outposts and marches, regimental review, inspection, parade, escort of the colors, guard mounting, target practice for the Senior class, instruction in company reports, muster rolls, rosters, etc.

DEPARTMENT OF PHYSICS.

ACTING PROFESSOR WRIGHT, MR. MCPHEETERS, MR. SKEELER, MR. MCADAMS, MR. BATES.

The courses in this department are designed to impart to students some acquaintance with the various fields of physics, to accustom them to exact reasoning from experiment to theory, and to prepare them for further instruction in the more technical studies of the various departments. Instruction is given by recitation from standard texts, supplemented by numerous illustrated lectures, quizzes and practical problems. Especial emphasis is given to laboratory work. Full written reports are required of all experiments performed. Practical applications of the principles involved are emphasized throughout the courses.

The courses are as follows:

1. Elementary Physics. Freshman. First and Second terms, 3 hours a week; with practice.

Lectures, recitations, problems, and illustrations in elementary mechanics, heat, sound, and light.

Practice, 2 hours a week.

The practice includes: Measurements of precision with vernier and micrometer calipers and balances; curve plotting; accurate determinations of lengths, volumes, densities, forces, moments, stress, expansion, specific heat, heat exchange, refraction and reflection of light by various forms of lenses and mirrors, velocity of sound in different media, and the laws of vibrating strings. The Metric or the English system of units is used as the instructor may designate.

(Required in Course I.)

2. General Physics. Sophomore. First term, 2 hours a week; with practice.

This course is a continuation of course 1, the work of the term being largely devoted to electricity and magnetism.

Practice. 2 hours a week.

Prerequisite, *Physics* 1, *Mathematics* 11.

(Required in Course I.)

3. Elementary Physics. Freshman. First and second terms, 2 hours a week; with practice.

Lectures, recitations, problems and illustrations in elementary mechanics, heat, sound, and light. Particular stress is laid on problems presented in text-book and class.

Practice, 2 hours a week. For description, see course 1.

(Required in all four-year Engineering courses.)

4. General Physics. Sophomore. First and second terms, 3 hours a week; with practice.

Lectures, recitations, problems, and demonstrations in the theory of mechanics, heat, electricity and magnetism. In this course particular stress is laid on the derivation of the various formulas necessary for a thorough understanding of the mathematical relations existing in physical determinations. Much emphasis is placed on practical problems furnished by the instructors.

Practice, 2 hours a week.

The practice includes magnetic and electrical measurements and a series of exercises in mechanics and calorimetry more advanced than those of course 3.

Prerequisite, *Physics* 3, *Mathematics* 2, 3.

(Required in Courses III, IV, VI, VIII.)

6. General Physics. Sophomore. Second term, 2 hours a week; with practice.

This course is identical with the Electricity and Magnetism given in course 4.

Practice, 2 hours a week, equivalent to course 4. Second term.

Prerequisite, *Physics* 3, *Mathematics* 2, 3.

(Required in Courses VII, IX.)

7. General Physics. Sophomore. Second term, 2 hours a week.

This course is identical with Heat given in course 4.

Prerequisite, *Physics* 3, *Mathematics* 2, 3.

(Required in Course V.)

8. General Physics. Sophomore. Second term, 2 hours a week.

This course is identical with the Mechanics given in course 4.

Prerequisite, *Physics* 3, *Mathematics* 2, 3.

(Required in Course V.)

9. General Physics. Sophomore. Second term, 2 hours a week. Practice.

This course consists of a series of laboratory exercises in calorimetry and mechanics.

(Required in Course V.)

EQUIPMENT.

The Department of Physics occupies the first floor and part of the basement of the Civil Engineering Building. Alternating and direct current, storage battery, water, gas, and electric lights are conveniently arranged and connected throughout the department. The equipment is sufficient for a great variety of demonstration and laboratory work.

Mechanics of Solids, Liquids, and Gases: Apparatus for determining moment of inertia, centrifugal force, acceleration, mechanical and electrical equivalent of heat, Young's Modulus, Hooke's Law; micrometer and venier calipers, rotators, U. S. Standard Measures, air pumps, hydraulic press, cathetometer, balances, and many simple and compound machines.

Heat: Conductometers, thermopiles, expansion apparatus, various types of thermometers, and numerous calorimetric outfits.

Lights: Polariscope, spectometer, vernier microscope, nicols, camera, projection lantern, optical bench, Hartl discs, and a great variety of lenses and mirrors.

Sound: Sonometers, tuning forks, organ pipes, and wave motion apparatus.

Electrostatics: A very large static machine and accessories

Current Electricity: Various types of batteries, rheostats, bridges, galvanometers, induction coils, telephone and telegraph fixtures, mercury arc and electrolytic rectifiers; ammeters, voltmeters, and motors for both alternating and direct current; and complete X-Ray outfit.

The department has a well chosen assortment of general and special accessories for use with the above apparatus.

The work-shop is supplied with drill-press, soldering outfit, stock materials, and the usual metal and wood working tools. In the shop all repairs and improvements are made and the specially devised apparatus, requiring continual test, is constructed. Many of the most useful pieces of apparatus have been constructed in the shop. Economy in time and money is thus effected.

The department library contains several hundred volumes treating of pure physics and kindred subjects.

GENERAL INFORMATION.

GRADES, REPORTS, EXAMINATIONS AND ADVANCEMENT.

Records of the standing of each student are kept by the instructors in the several departments. This standing is indicated by a system of marks based upon 100 as a maximum.

At the end of each term, examinations are held and a report is mailed to the parent or guardian of each student, showing his class standing and conduct. A preliminary report is made December 1.

When a student is absent from recitation a considerable number of times, his absences are taken into account in making up his term grade, unless the work missed is satisfactorily made up before the time set for the examination.

The passing mark is 70 for the Junior and Senior classes, and 66 for all other classes.

Reports are made in terms of letters with the following meanings: 90 to 100 inclusive, A; 80 to 89, inclusive, B; passing mark to 79, inclusive, C; from 50 to the passing mark, D; below 50, E. In "practice" only two grades are given; P passed; F failed. Students who receive a grade E in any subject must take the subject over in class in order to receive credit.

No student will be advanced from a lower to a higher class while he has recorded against him more than eight term-subjects; and no student will be classed as a Senior while he has recorded against him more than four term-subjects.

EXAMINATION SCHEDULE, FIRST TERM, SESSION 1914-15.

(Note:— This schedule is subject to change. The official schedule will be posted on the bulletin board before the time for the examinations.)

Tuesday, January 26.	Wednesday, January 27.	Thursday, January 28.	Friday, January 29.	Saturday, January 30.	Monday, February 1.	Tuesday, February 2.	Wednesday, February 3.
Biol. 2	A. H. 5 Ch. E. 5 C. E. 13 Econ. 3 E. E. 8 Engl. 5 Hort. 3 M. E. 7 Mil. Sc. 1	Arch. 26, 31 Biol. 15 Chem. 2 Hist. 1 Math. 6 M. E. 2 Phys. 2, 4 T. E. 3	Ag. Ed. 1 Agron. 3 Biol. 4, 6, 7 Chem. 6, 1a, 5 Econ. 4 Engl. 2, 10 Math. 1 T. E. 2, 2a Vet. Sc. 6	Ag. Ed. 2 Agron. 4, 8 A. H. 8 Arch. 34 Biol. 1, 3, 5 Chem. 7, 12, 4, 20 C. E. 5, 18 E. E. 10 Engl. 9 Entom. 3 Hist. 2 Language M. E. 5, 8 Phys. 3 T. E. 16 Vet. Sc. 1, 7	Agron. 5, 17 A. H. 7 Arch. 40, 30 Chem. 1a C. E. 7, 16 D. H. 4 E. E. 3 Engl. 4 Hort. 8 Math. 4 M. E. 1, 6 T. E. 9, 6, 6a, 9a	Agron. 6 Arch. 25 Ch. E. 1 C. E. 1, 6, 15 Draw. 2 E. E. 1 Hort. 1a, 15 M. E. 5a Phys. 1 T. E. 1, 4, 8 Vet. Sc. 2	Agron. 2a, 7, 15 A. H. 6 Arch. 26 Ch. E. 6 Chem. 1 C. E. 14, 17 D. H. 2, 16 E. E. 9 Entom. 1 Hort. 7 Math. 2, 11 M. E. 3 T. E. 7

EXAMINATION SCHEDULE, SECOND TERM, SESSION 1914-15.

(Note:—This schedule is subject to change. The official schedule will be posted on the bulletin board before the time for the examinations.)

	Saturday, May 22.	Monday, May 24.	Tuesday, May 25.	Wednesday, May 26.	Thursday, May 27.	Friday, May 28.	Saturday, May 29.
	Mil. Sc. 2	Agron. 18 Arch. 41 Chem. 11 C. E. 20 E. E. 8 M. E. 7 T. E. 11	Econ. 4 Vet. Sc. 16	Arch. 35 Ch. E. 3 C. E. 21 E. E. 9 Entom. 10 M. E. 5 T. E. 10, 16	A. H. 17, 18 Ch. E. 6 C. E. 7, 23 E. E. 10 T. E. 3, 9	C. E. 22 E. E. 6, 11 Engl. 10 M. E. 6, 9 T. E. 8	Arch. 42 Ch. E. 5 Chem. 10, 20 M. E. 5a, 8 T. E. 7
Friday, May 28.	Saturday, May 29.	Monday, May 31.	Tuesday, June 1.	Wednesday, June 2.	Thursday, June 3.	Friday, June 4.	Saturday, June 5.
Vet. Sc. 4	C. E. 10 E. E. 3 Hort. 4 M. E. 1 T. E. 2a, 2 Vet. Sc. 3	Arch. 26 D. H. 3 E. E. 5, 6, 13 Entom. 2 Hist. 1 Hort. 2 Phys. 3, 4, 7	Arch. 24, 35 Biol. 1 Ch. E. 3 C. E. 3, 11 Engl. 2, 4, 9 M. E. 2, 3, 5 T. E. 5	A. H. 3, 4 Biol. 16 Chem. 2 C. E. 7, 12 E. E. 12 Hist. 2 Language Math. 2 Phys. 1 T. E. 3	Agron. 3, 16 Chem. 1a C. E. 6a D. H. 1 Hort. 6 Math. 3 Phys. 6, 8 T. E. 6, 6a	Agron. 2a A. H. 16 Arch. 36 Biol. 3 Chem. 4 C. E. 2, 9 Draw. 2 E. E. 4 Math. 5, 11 M. E. 6 T. E. 1	A. H. 5 Arch. 27 Biol. 2 Chem. 1 C. E. 4 E. E. 2 Hort. 5 M. E. 4

DEFICIENCY EXAMINATIONS.

In each term there is held a series of examinations for the removal of deficiencies incurred in the preceding term. These examinations are open only to those who have a term grade D, and to those absent from the regular examination with excuse. Special examinations will in no case be given without Faculty action.

The deficiency examinations for the courses given during the second term of the session of 1913-14 will be held according to the following

Schedule.

September 21.		September 22.	
8:30 a. m.	1:00 p. m.	8:30 a. m.	1:00 p. m.
Agron. 2a	Agron. 16	Agron. 3	A. H. 16
Arch. 26, 36	A. H. 3	A. H. 4, 5	Chem. 1, 1a, 4
Biol. 3	Arch. 24, 27	Arch. 35	C. E. 4, 6a, 9
C. E. 10	Biol. 1	Biol. 2, 16	D. H. 1
E. E. 4, 5, 6	Ch. E. 3	Chem. 2	Draw. 2
Engl. 9	C. E. 3, 11	C. E. 2, 7, 12	E. E. 2
Ent. 2	E. E. 13	D. H. 3	Hist. 1
Hort. 2, 6	Engl. 2	E. E. 3, 12	Math. 3
Math. 11	Hist. 2	Engl. 4	M. E. 6
M. E. 4	Hort. 5	Hort. 4	Phys. 6, 8.
Phys. 3, 4, 7	M. E. 2, 5	Math. 2, 5	T. E. 6, 6a
Vet. Sc. 4	Mil. Sc. 1	M. E. 1, 3	
	T. E. 2, 2a, 5	Phys. 1	
	Vet. Sc. 3	T. E. 1, 3	

GRADUATION.

A diploma of the College, with the degree corresponding to the course of study pursued, will be granted students who complete one of the regular courses and pass satisfactory examinations on all of the branches therein.

No degree will be conferred without a residence of at least one year at the College. The diploma fee is $5.00.

HONORS.

At the end of each session students who have during the year received no term grade below B and have no deficiency in "Practice" are announced as "Distinguished."

ACADEMIC BUILDING.

The Academic Building erected in 1912, is located on the highest part of the campus and occupies the site of the original Main Building which was erected in 1876 and destroyed by fire May 27, 1912. It is 89 feet wide and 260 feet long and four stories high. It provides class and lecture rooms for the department of Architecture, Drawing, Economics, English, History, and Mathematics, and quarters for the administrative offices, the library, and the armory; certain other departments have been assigned temporary quarters in this building. The building is constructed of brick and reinforced concrete, and is fireproof.

BERNARD SBISA HALL.

This is a one-story, fireproof building erected in 1912, to replace the Mess Hall destroyed by fire in October, 1911. The dining room has a seating capacity of over 1200, and the appointments of the building are modern in every respect.

MECHANICAL ENGINEERING BUILDING.

This building is situated north of the Academic Building and partly houses the Department of Mechanical Engineering. It consists of two distinct parts: First, the one containing the carpenter shop, and section rooms; second, that containing the blacksmith shop, machine shops, wood-turning room, and experimental laboratory. The first mentioned part is a two-story part, having the carpenter shop on the first floor and the other rooms on the second floor. The second part of the building is a one-story structure, containing the departmental equipment belonging to the work therein cared for; also an additional steam engine which furnishes the power for the shops.

AGRICULTURAL AND HORTICULTURAL BUILDING.

This building, erected in 1899, accommodates the agricultural and horticultural departments of the College by furnishing rooms for class instruction, laboratory investigations, museum purposes, butter and cheese making, pasteurizing milk, seed store room, photographic room, and the necessary offices for the accommodation of these departments. The building is 160 feet long and 77 feet wide, two stories high, and covered with slate. It contains twenty-seven rooms, fitted with apparatus and machinery for the instruction of students in the several branches of agriculture and horticulture.

CHEMICAL AND VETERINARY BUILDING.

This building, erected in 1902, is 138 feet long and 130 feet deep. It is built of brick and contains two stories and a basement. On the first floor the Veterinary Department has its office, veterinary laboratory, students' laboratory, dissecting room, operating room, museum, lecture room and apparatus room. The Chemical Department has on the same floor two store rooms, an assay room and a laboratory for State chemical work.

The second floor comprises the chemical and mineralogical museum, office and private laboratory of the professor of chemistry, two lecture rooms, balance room, two supply rooms and three laboratories for students.

VETERINARY HOSPITAL.

The Veterinary Hospital, erected in 1908, contains a clinic room, 36x36 feet, eight box stalls, four tie stalls, two rooms for dogs, a large colic stall, feed room, medicine room, janitor's room, etc. The building is floored with concrete, with traps from each stall to the sewer, thus permitting the proper isolation of contagious diseases and the thorough disinfection of each stall. An automatic flush tank serves to keep the building in a sanitary condition.

TEXTILE BUILDING.

This building, erected in 1904, is constructed of smooth red brick, according to the plans of an expert mill engineer, and is an excellent example of modern cotton mill construction. The construction is of the slow-burning type generally accepted by American engineers as the most satisfactory for cotton manufacturing.

The building is two stories high, 50 feet wide and 180 feet long. The first floor is occupied by the carding and spinning and warp-preparation machinery, and the Professor's office. The second floor is occupied by the weaving and cloth-finishing machinery and by the designing and classrooms, and the offices of the instructors in weaving.

The building is heated throughout by a Webster vacuum system of steam heat, and a complete sprinkling system for fire protection has been installed. The plumbing in the building is perfectly sanitary and typical of the best cotton mill practice.

CIVIL ENGINEERING BUILDING.

This building, erected in 1909, and used to house the departments of Civil Engineering and Physics, contains eight lecture rooms, five laboratories, five drawing rooms, and several offices and store rooms.

The building is 125 feet wide and 73 feet deep; it has a basement and three stories, is heated by steam and is fireproof.

ELECTRICAL ENGINEERING BUILDING.

This building, erected in 1912, and used to house the departments of Electrical Engineering and Mechanical Engineering, contains thirteen lecture rooms, four laboratories, two drawing rooms, and several offices and store rooms.

It has a basement and three stories; is 125 feet wide by 103 feet deep; is heated by hot water, and is fireproof.

EXPERIMENT STATION BUILDING.

This building, erected in 1909, contains offices, laboratories and store rooms for the officers of the Experiment Station.

The building is 115 feet wide and 61 feet deep; it has a basement and two stories, is heated by steam, and is fireproof.

GATHRIGHT HALL.

This building was erected in 1876, and is named in honor of Thomas L. Gathright, the first President of the College. It is being used temporarily for administrative offices and for section rooms.

PFEUFFER HALL.

This is a dormitory, erected in 1887, and contains twenty-five rooms. It is named in honor of George Pfeuffer, a former President of the Board of Directors.

AUSTIN HALL.

This is a dormitory, erected in 1888, and contains twenty-five rooms. It is named in honor of Stephen F. Austin.

ROSS HALL.

This is a dormitory, erected in 1892, three stories high, with forty-one rooms. It is named in honor of former President L. S. Ross.

FOSTER HALL.

This building was erected in 1899, and is named in honor of former President L. L. Foster. It is a dormitory and consists of three separate parts; the central part is four stories high and contains nineteen rooms; the two ends are three stories high and contain eighteen rooms each.

GOODWIN HALL.

This dormitory was erected in 1908 and named in honor of Hon. G. I. Goodwin. It contains eighty-two rooms and is equipped with a steam heating system and modern toilet facilities.

MILNER HALL.

This building was erected in 1911 and named in honor of former President R. T. Milner. It is a dormitory containing one hundred and two rooms. The building is four stories high; there are no connecting stairways between the several floors, but each story has separate entrances so as to divide the buildings into four distinct parts, without interfering with the ventilation in any part of the building. Each story has four shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick and is practically fireproof.

LEGETT HALL.

This building was erected in 1911 and is named in honor of K. K. Legett, a former President of the Board of Directors. It is a dormitory and in every respect a duplicate of Milner Hall.

HARVEY MITCHELL HALL.

This building was erected in 1912, and is named in honor of a former citizen of Bryan, who was largely instrumental in having the College located in Brazos county.

It is a dormitory, having a basement and three stories, and contains eighty-six rooms, each one having an outside exposure. Each story has shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick, and is practically fireproof.

ASSEMBLY HALL.

This is a two-story brick building, erected in 1889, having a main floor and gallery.

NATATORIUM.

This building was erected in 1908 and is thoroughly equipped for shower baths. It contains forty-six dressing rooms, thirty-two stalls supplied with hot and cold water for shower baths, toilet facilities, and rooms for the attendants.

SEWERAGE SYSTEM.

The College is provided with an efficient system of sewers, to which are connected the various barracks, the main building, the agricultural and horticultural hall, the steam plant, the infirmary, the mess hall, and the residences. The outfall of the system is three-fourths of a mile from the nearest College building and nine-tenths of a mile from the nearest recitation hall or barracks building.

FARM BUILDINGS.

The farm buildings of the College and Experiment Station are situated to the rear of the main building, and consist of a farm implement building, a mule barn, a general farm barn, a large dairy barn with two silos, each of 200 tons capacity.

OTHER IMPROVEMENTS.

Other improvements comprise a laundry, an ice plant with a daily capacity of five tons, a system of waterworks, an electric light and cold storage plant.

GROUNDS AND GARDEN.

The garden, orchard, barnyards and campus are included in the enclosure to the east of the railroad station. The campus consists of some twenty-five acres of lawn, shrubbery and flowers.

The orchard, vineyard, nursery and garden are located north and east of the Academic building.

FARM.

The farm proper comprises about three hundred and fifty acres. The pastures contain in the neighborhood of two thousand acres, and furnish grazing for the College herds.

LIBRARY.

The College Library was completely destroyed by fire in the burning of the Main Building, May 27, 1912. Through the generosity of friends of the College in Houston it has been possible to make a beginning in its re-establishment. The Library contains 2400 volumes, exclusive of 1200 bound public documents, and about 15,000 pamphlets. It is chiefly a library of reference, containing standard and technical works bearing particularly upon lines of study pursued in the College. The greatest care has been exercised in the selection of books, so as to include only the latest and most essential books in each line. With the exception of encyclopedias, etc., periodicals and books temporarily reserved for required reading in the several courses, all books are loaned for home use for a period of two weeks with the privilege of renewal.

A large number of complimentary periodicals and exchanges are regularly received and the library subscribes to 73 standard magazines, reviews and technical journals. All these are indexed in the Reader's Guide to Periodical Literature which is likewise to be found in the Library. The leading newspapers of Texas are received and filed.

The Library is a designated depository and receives copies of all the publications of the Federal Government which the Superintendent of Public Documents is authorized to distribute. The greater part of the publications of the U. S. Department of Agriculture and of the several Experiment Stations are on file and a complete card index for all these is maintained.

The Library is open from 8:30 a. m. to 5:45 p. m. on week days, and from 2 to 5 p. m. on Sundays.

RELIGIOUS AND MORAL CULTURE.

There is religious service in the chapel every Sunday for the corps of students and the residents of the campus. A Sunday school for Bible study, attendance at which is voluntary, affords additional help in the way of ethical training. Every effort is made through lecture and personal example to develop and protect good morals in the young men attending the institution.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Young Men's Christian Association of the College has an enrollment of about 500 members. It conducts religious meetings and lectures on Sunday nights, and Bible study classes, in which about 475 students are enrolled, in the several dormitories and in Sunday School on Sunday mornings. It employs a General Secretary, who devotes his entire time to the work.

An Association building to cost about $70,000 is now being finished on the College campus.

ATHLETICS.

The usual forms of athletic sports are permitted. The College is a member of the Texas Intercollegiate Athletic Association and of the

Southern Intercollegiate Athletic Association. The general rules of eligibility of both these organizations have been adopted by the Faculty and published in the Blue Book. The Faculty Committee on Athletics is intrusted with the general oversight of athletics.

The following rules are of especial interest to parents and guardians:

Officers and members of athletic squads or teams which propose to take part in intercollegiate athletics must satisfy the following requirements:

(a) Unless they are of age they must have the written consent of parent or guardian, sent directly by mail to the Dean.

(b) They must be carrying at least eighteen hours per week of work, and must be making passing grades in at least fourteen hours of work. In order that this requirement may be enforced, reports shall be made to the Dean at the end of the first month of the session, and thereafter at bi-weekly intervals during the seasons devoted to the several sports; each report to cover the work from the beginning of the current term to the date of the report.

(c) In their last term of attendance they must have passed in at least fourteen hours of work. Absence for one or more terms shall not vitiate this rule.

(d) They must not have been absent without excuse from class or other required college duties more than six times during the current term.

BAND.

An attractive feature is a regularly organized cadet band. Under the direction of a leader employed by the College, it furnishes music for occasions of social and military importance, gives open-air concerts in season, leads the regiment in marching to dinner, and plays at guard mounting and dress parade.

AFFILIATED SCHOOLS.

The Faculty, with the desire to bring the College into closer relation with the schools of the State, has provided that graduates of approved schools shall be admitted to the College on diploma or certificates *at the beginning of the session* without examination. Superintendents who desire to have their schools enrolled among the affiliated schools are invited to examine the requirements for admission, and the specimen examination questions in the appendix.

The offer of affiliation is made upon the following terms: The superintendent of a school desiring affiliation should obtain from the Registrar of the College a form of application to be filled out and returned. If the application should be approved by the Faculty, the superintendent will be notified and the name of the school and that of the superintendent enrolled in the catalogue. The privilege of affiliation will be withdrawn from any school whose graduates show a lack of thoroughness in their preparation for the work of the College.

Catalogues of the College will be sent regularly to superintendents of affiliated schools, and they in turn will be expected to send the Dean copies of their reports or catalogues.

LIST OF AFFILIATED SCHOOLS.

Name.	Superintendent.	Location.
Abilene High School	J. H. Burnett	Abilene.
Albany High School	M. I. Miles	Albany.
Alexander Collegiate Institute	F. E. Butler	Jacksonville.
Alice Public School	W. C. Ogier	Alice.
Allen Academy	J. H. and R. O. Allen	Bryan.
Alpine	G. W. Page	Alpine.
Alvarado High School	S. E. Watson	Alvarado.
Alvin Public School	R. R. Sebring	Alvin.
Alvord Public School	J. Arthur Tibbetts	Alvord.
Alto Public School	J. M. Cook	Alto.
Amarillo Public School	S. M. Byrd	Amarillo.
Angleton High School	J. B. Oliver	Angleton.
Anna High School	W. L. Roper	Anna.
Anson High School	J. W. Grissom	Anson.
Arlington Public School	H. Tarpley	Arlington.
Aspermont Public School	T. L. Hiner	Aspermont.
Athens High School	I. P. Skinner	Athens.
Atlanta High School	J. B. McClung	Atlanta.
Aubrey High School	J. T. Teel	Aubrey.
Austin High School	A. N. McCallum	Austin.
Axtell High School	C. C. Cross	Axtell.
Baird Public School	R. D. Green	Baird.
Ball High School	J. W. Hopkins	Galveston.
Ballinger High School	W. S. Fleming	Ballinger.
Barnett School, The	W. W. Barnett	Houston.
Bastrop Public School	W. P. Arnold	Bastrop.
Bay City High School	R. E. Scott	Bay City.
Beaumont High School	H. F. Triplett	Beaumont.
Beeville High School	W. E. Madderra	Beeville.
Bellevue High School	Nolan T. Gaines	Bellevue.
Bellville High School	C. N. Shaver	Bellville.
Belton Academy	C. H. Wedemeyer	Belton.
Belton High School	L. H. Hubbard	Belton.
Big Foot Public School	D. M. Henry	Big Foot.
Big Sandy Public School	A. M. W. Smith	Big Sandy.
Big Springs High School	J. W. Dees	Big Springs.
Blanco High School	T. B. Bailey	Blanco.
Blanket High School	D. F. Eaton	Blanket.
Blinn Memorial College	J. L. Neu	Brenham.
Blossom High School	Dexter Diffie	Blossom.
Blum High School	C. F. Christensen	Blum.
Boerne High School	R. J. Kepke	Boerne.
Bonham High School	I. W. Evans	Bonham.
Bowie High School	E. G. Alexander	Bowie.
Brackett High School	D. E. McArthur	Brackettville.
Brady High School	R. H. Long	Brady.

Name.	Superintendent.	Location.
Brandon High School	J. D. Mayo	Brandon.
Breckenridge Public School	J. R. Smith	Breckenridge.
Bremond High School	H. E. Blythe	Bremond.
Brenham High School	W. D. Motley	Brenham.
Britton's Training School	O. L. Britton	Cisco.
Brookston High School	J. H. English	Brookston.
Brownsville Public School	C. H. Hallmark	Brownsville.
Brownwood High School	G. H. Carpenter	Brownwood.
Bryan Baptist Academy	R. McDonald	Bryan.
Bryan High School	W. C. Lawson	Bryan.
Buda High School	J. E. Watkins	Buda.
Buffalo High School	R. O. Bennett	Buffalo.
Buna High School	A. D. Rawlinson	Buna.
Burleson High School	Clyde Howard	Burleson.
Burnet High School	M. B. Brown	Burnet.
Caldwell High School	J. M. Smith	Caldwell.
Calvert High School	I. N. Stevens	Calvert.
Cameron High School	J. E. Watts	Cameron.
Canyon School	Thos. J. Yoe	Canyon.
Carbon High School	L. L. Burney	Carbon.
Carlisle Military Academy	J. M. Carlisle	Arlington.
Carlton Public School	W. A. O'Quinn	Carlton.
Carney Graded School	E. A. Caldwell	O'Brien.
Carthage High School	A. J. Holmes	Carthage.
Cedar Hill Public School	G. R. Adkins	Cedar Hill.
Celeste Public School	Robt. L. Dudney	Celeste.
Celina Public School	C. T. Cobb	Celina.
Center High School	M. M. Dupre	Center.
Channing Public School	J. F. Smith	Channing.
Chapel Hill High School	W. R. Kennedy	Chapel Hill.
Childress High School	W. H. Wooddey	Childress.
Chillicothe Public School	Robt. L. Dudney	Chillicothe.
Cisco High School	J. N. Johnston	Cisco.
Clarksville High School	R. C. Campbell	Clarksville.
Claude High School	W. L. Bates	Claude.
Clayton Rural High School	J. O. Lowe	Clayton.
Cleburne High School	R. G. Hall	Cleburne.
Clifton High School	J. M. Bettis	Clifton.
Clyde Public School	J. B. Shannon	Clyde.
Coleman Public School	J. E. Hickman	Coleman.
Collinsville High School	E. R. Benedict	Collinsville.
Colorado High School	W. W. Hart	Colorado.
Columbus High School	B. T. Gillespie	Columbus.
Comanche High School	R. F. Holloway	Comanche.
Conroe High School	W. C. Hanna	Conroe.
Cookville Public High School	H. H. J. Fling	Cookville.
Cooper High School	J. H. Newton	Cooper.
Copperas Cove High School	J. M. Witcher	Copperas Cove.
Coronal Institute	Sterling Fisher	San Marcos.
Corpus Christi High School	C. W. Crossley	Corpus Christi.
Corsicana High School	J. E. Blair	Corsicana.
Coryell City School	Boone Huddleston	Coryell.
Cotulla High School	R. A. Taylor	Cotulla.
Crawford High School	B. C. Dyess	Crawford.
Cresson Public School	C. E. Bloss	Cresson.
Crockett High School	Donald McDonald	Crockett.
Crowell Public School	E. W. Muse	Crowell.
Cumby Public School	C. E. McGuire	Cumby.
Dalhart High School	G. R. Kelly	Dalhart.
Dallas High School	James A. Brooks	Dallas.
Dawson Public School	E. W. Tarrant	Dawson.
Decatur High School	H. P. Barton	Decatur.
D'Hanis High School	J. L. Williams	D'Hanis.
De Leon High School	J. S. Carroll	De Leon.
Del Rio Public School	W. F. Jourdan	Del Rio.
Denison High School	F. B. Hughes	Denison.
Denton High School	J. S. Carlisle	Denton.
Deport Public School	Geo. W. Webb	Deport.
Detroit Public School	W. I. Woodson	Detroit.
Devine High School	W. H. Adamson	Devine.
Dodge School	E. A. Bennick	Dodge.
Donna High School	J. F. M. Stephens	Donna.
Douglas Select School	S. A. Douglas	Waco.
Dublin High School	J. W. Dunlap	Dublin.
Duffau High School	John Purvis	Duffau.
Dunn Public School	O. L. Howell	Dunn.
Durango Public School	Mrs. N. F. Alsup	Durango.
Eagle Lake High School	J. H. Morgan	Eagle Lake.
Eagle Pass High School	W. S. Bliss	Eagle Pass.
Eastland Public School	N. A. Cox	Eastland.
Eden High School	D. C. Broyles	Eden.
Edgewood High School	T. R. Howard	Edgewood.

Name.	Superintendent.	Location.
Edna High School	J. W. Bagby	Edna.
El Campo Public School	A. W. Griggs	El Campo.
Eldorado High School	B. F. Bennett	Eldorado.
Elgin High School	Buckner Harris	Elgin.
El Paso High School	N. R. Crozier	El Paso.
Ennis High School	J. D. Coghlan	Ennis.
Evant High School	D. B. Burrows	Evant.
Farmersville High School	W. E. Foster	Farmersville.
Flatonia High School	M. A. McDonald	Flatonia.
Florence High School	I. A. Hicks	Florence.
Floresville High School	W. B. Toone	Floresville.
Floydada Public School	F. E. Savage	Floydada.
Fort Davis High School	A. B. Tyson	Fort Davis.
Fort Worth High School	J. W. Cantwell	Fort Worth.
Franklin Public School	W. C. Crane	Franklin.
Franfort Independent School	Miss Mary Brown	Frankston.
Franklin Institute		Mount Vernon.
Fredericksburg High School	Wm. Dietel	Fredericksburg.
Frisco Public School	I. I. Isbell	Frisco.
Frost High School	L. C. Stockard	Frost.
Gainesville High School	J. P. Glasgow	Gainesville.
Garland High School	S. M. Loyd	Garland.
Gatesville High School	G. W. Harris	Gatesville.
Georgetown High School	J. W. Clark	Georgetown.
Giddings Public School	T. P. Walker	Giddings.
Gillespie School	J. B. Jones	Knox City.
Gilmer High School	I. A. Costan	Gilmer.
Gladewater High School	S. D. Pearce	Gladewater.
Glen Rose High School	R. E. McDonald	Glen Rose.
Godley High School	L. I. Smith	Godley.
Goldthwaite High School	A. J. Street	Goldthwaite.
Goliad Public School	T. S. Cox	Goliad.
Gonzales Public School	W. E. Taylor	Gonzales.
Gordon High School	C. E. Maxwell	Gordon.
Goree Graded School	A. L. Hardgrave	Goree.
Gorman Public School	J. E. Smith	Gorman.
Graham High School	Edgar McLendon	Graham.
Granbury High School	R. P. Jarrett	Granbury.
Grand Prairie High School	J. A. Whitener	Grand Prairie.
Grand Saline School	J. W. Talkington	Grand Saline.
Grandview Public School	N. O. Robbins	Grandview.
Granger High School	T. P. Mallard	Granger.
Grapeland Public School	W. L. Price	Grapeland.
Grapevine High School	P. D. Kennamer	Grapevine.
Greenville High School	L. C. Gee	Greenville.
Groesbeck High School	J. F. Henson	Groesbeck.
Groveton High School	L. J. Frizzell	Groveton.
Hallettsville Public School	K. A. Jones	Hallettsville.
Hamilton High School	G. J. Mason	Hamilton.
Hamlin Public School	K. C. Spratlen	Hamlin.
Hankin's Normal College	J. H. Hankin	Gorman.
Hardin School for Boys	J. A. Hardin	Dallas.
Harrisburg High School	Joe W. Lyle	Harrisburg.
Haskell High School	R. J. Turrentine	Haskell.
Hearne High School	W. A. Holland	Hearne.
Hempstead Public School	J. H. Naff	Hempstead.
Henderson High School	P. B. Bittle	Henderson.
Henrietta High School	S. R. Terry	Henrietta.
Hewitt Public School	J. L. Smith	Hewitt.
Hico Graded School	P. B. Peterson	Hico.
Hillsboro High School	T. D. Brooks	Hillsboro.
Holland High School	J. W. G. Meadows	Holland.
Hondo High School	T. C. Hickman	Hondo.
Honey Grove High School	W. L. Willis	Honey Grove.
Houston Heights High School	L. W. Greathouse	HoustonHeights.
Houston High School	P. W. Horn	Houston.
Howe Public School	S. B. Sivells	Howe.
Huckaby Public School	O. E. Covey	Huckaby.
Hutto High School	T. G. Coger	Hutto.
Iowa Park Public School	J. A. Ramsey	Iowa Park.
Italy High School	E. W. Rehy	Italy.
Itasca High School	G. L. Marshall	Itasca.
Jacksboro High School	L. Z. Timmons	Jacksboro
Jacksonville Public School	B. J. Albritton	Jacksonville.
Jefferson High School		Jefferson.
Jewett High School	J. T. Alexander	Jewett.
John C. French High School	M. V. Peterson	Cuero.
Johnson City High School	O. R. Hewett	Johnson City.
Junction High School	D. F. McCollum	Junction.
Justin Agricultural High School	J. N. Mallory	Justin.

Name.	Superintendent.	Location.
Karnes City High School	A. V. McClothing	Karnes City.
Kaufman Public School	O. P. Norman	Kaufman.
Kemp Public School	H. F. Moore	Kemp.
Kenedy High School	R. W. Bennett	Kenedy.
Kennard High School	W. M. Anderson	Kennard.
Kennard Mills High School	J. T. Cook	Ratcliff.
Killeen High School	M. P. Dalton	Killeen.
Kirbyville High School	R. W. Persons	Kirbyville.
Kosse High School	J. R. Atkins	Kosse.
Kyle High School	Henry R. Moore	Kyle.
Ladonia Public School	C. G. Yarborough	Ladonia.
LaGrange High School	W. J. Kirk	LaGrange.
Lamesa Public School	D. C. Ashmore	Lamesa.
Lampasas High School	G. D. Scott	Lampasas.
Laneville High School	W. E. Youngblood	Laneville.
La Porte Public School	James A. Kelley	La Porte.
Laredo High School	L. J. Christen	Laredo.
Laredo Seminary	Miss N. E. Holding	Laredo.
Lavernia High School	O. F. Burney	Lavernia.
Lawrence Public School	A. N. Brown	Lawrence.
Leander Public School	J. A. Hudson	Leander.
Ledbetter Public School	A. H. Wilcox	Ledbetter.
Leesville Public School	W. R. Muir	Leesville.
Leonard High School	C. T. Speed	Leonard.
Lewisville Academy	Herbert C. Lyon	Lewisville.
Lexington Public School	E. Mackintosh	Lexington.
Liberty Normal and Business College	H. W. Stevenson	Liberty.
Lindale High School	James O'Keefe	Lindale.
Lipan Public School	Amos Bennett	Lipan.
Livingston High School	J. C. Wright	Livingston.
Llano High School	J. G. Toland	Llano.
Lockhart High School	Cuthbert Spencer	Lockhart.
Lockney Public School	E. C. Nix	Lockney.
Lometa Public School	J. Weir	Lometa.
Lone Oak High School	C. J. Denton	Lone Oak.
Longview High School	S. J. Blocker	Longview.
Lott Public School	W. F. Turner	Lott.
Louise Public School	Miss Almena Sublett	Louise.
Lovelady High School	W. H. Tomme	Lovelady.
Lubbock High School	J. K. Wester	Lubbock.
Lufkin High School	S. W. Derrickson	Lufkin.
Luling High School	J. W. Peeler	Luling.
Lutheran College	F. W. C. Jesse	Clifton.
McGregor High School	H. P. Walker	McGregor.
McKinney High School	J. H. Hill	McKinney.
Madison Academy	M. L. Bennett	Madisonville.
Manor Public School	W. T. Pollard	Manor.
Mansfield High School	A. V. Byrd	Mansfield.
Marble Falls Academy	A. S. J. Steel	Marble Falls.
Marfa High School	H. B. Griffin	Marfa.
Marlin High School		Marlin.
Marshall High School	B. B. Cobb	Marshall.
Marshall Training School	N. J. Marshall	San Antonio.
Mart Public School	W. E. Patty	Mart.
Martindale High School	T. A. Fisher	Martindale.
Mason Public School	F. A. Koenig	Mason.
Masonic Industrial School	S. B. Bedinger	Fort Worth.
Medina High School	L. C. Ingram	Medina.
Memphis High School	T. A. Taggart	Memphis.
Menardville High School	H. B. Cowles	Menardville.
Meridian College	G. F. Winfield	Meridian.
Meridian High School	R. N. Smith	Meridian.
Merkel High School	W. R. Craigbaum	Merkel.
Mesquite High School	W. J. Berry	Mesquite.
Mexia High School	E. B. Stover	Mexia.
Midland High School	W. W. Lackey	Midland.
Midlothian High School	M. H. Morris	Midlothian.
Miles Public School	J. H. Head	Miles.
Milford High School	S. E. Green	Milford.
Mineola High School		Mineola.
Mineral Springs Institute	W. B. Hargis	Garrison.
Mineral Wells Public School	E. O. McNew	Mineral Wells.
Moody Public School	M. R. Nelson	Moody.
Montague School	R. L. Shults	Montague.
Montgomery Public School	T. J. Payne	Montgomery.
Morgan Public School	T. S. Benton	Morgan.
Morgan's Mill Public School	A. C. Johnson	Morgan's Mill.
Moscow Public School	W. M. Anderson	Moscow.
Mount Calm High School	C. A. Middleton	Mount Calm.
Mount Enterprise School	N. C. Chaney	Mount Enterprise.
Mount Pleasant High School	G. P. Blackburn	Mount Pleasant.
Mount Vernon Public School	W. G. Shipp	Mount Vernon.
Munday Public School	A. J. Bunts	Munday.
Muskogee High School	E. S. Monroe	Muskogee, Okla.

Name.	Superintendent.	Location.
Nacogdoches High School	R. F. Davis	Nacogdoches.
Naples High School	C. B. Christian	Naples.
Navasota High School	J. T. Davis	Navasota.
Nevada High School	F. Z. T. Jackson	Nevada.
New Boston High School	H. C. Somerville	New Boston.
New Braunfels High School	B. Holecamp	New Braunfels.
Nocona Public School	F. F. Mace	Nocona.
Normangee High School	T. W. Brown	Normangee.
North Fort Worth Public School	M. H. Moore	North Fort Worth.
Oakwood Public School	R. H. Bing	Oakwood.
Odessa Public School	W. V. Harrison	Odessa.
Oenaville Public School	H. H. Goodman	Oenaville.
Olney High School	W. A. Cain	Olney.
Orange High School	J. E. Binkley	Orange.
Overton Public School	G. G. Hassell	Overton.
Paducah High School	C. L. Stone	Paducah.
Palacios High School	W. C. Gray	Palacios.
Palestine High School	Walker King	Palestine.
Palo Pinto Academy	H. T. Beckworth	Palo Pinto.
Paris High School	J. G. Wooten	Paris.
Park Public School	J. I. Wheeler	Nash.
Pasadena Public School	Miss Ella Wood Hill	Pasadena.
Peacock Military College	Wesley Peacock	San Antonio.
Pearsall Public School	S. G. Turner	Pearsall.
Pecos City High School	D. S. Robbins	Pecos City.
Pennington College	T. R. Allen	Justin.
Pilot Point Public School	A. B. Weisner	Pilot Point.
Pittsburg High School	C. L. Turner	Pittsburg.
Plainview High School	Miss Ellen Robinson	Plainview.
Plano High School	C. F. Walker	Plano.
Pleasanton Public School	Josiah Bixler	Pleasanton.
Port Arthur High School	J. H. Bright	Port Arthur.
Port Lavaca High School	J. E. Briggs	Port Lavaca.
Proctor Public School	M. P. Chambers	Proctor.
Purves High School	O. B. Rollins	Purves.
Quanah High School	J. W. O'Banion	Quanah.
Queen City Public School	Drew Porter	Queen City.
Quinlan High School	E. H. Watson	Quinlan.
Ranger Public School	J. E. Settle	Ranger.
Ravenna Public School	F. A. Spencer	Ravenna.
Richardson High School	J. W. Arnold	Richardson.
Richland Grammar School	Mrs. E. L. Moncrief	Richland.
Richmond High School	J. M. Patton	Richmond.
Riesel High School	T. S. Whitlock	Riesel.
Rising Star Public School	J. E. Wickham	Rising Star.
Robert Lee Public School	L. E. Crutcher	Robert Lee.
Rockdale Public School	C. G. Green	Rockdale.
Rock Island High School	J. H. Dufner	Rock Island.
Rockport Public School	H. O. Norwood	Rockport.
Rock Springs High School	J. H. Kile	Rock Springs.
Rockwall High School	J. E. Shelton	Rockwall.
Roscoe Public School	C. C. Shaver	Roscoe.
Rosebud Public School	B. F. Sisk	Rosebud.
Rosenberg High School	V. L. Peterson	Rosenberg.
Rotan Public School	L. L. Price	Rotan.
Royse City High School	Walter Platt	Royse City.
Runge High School	M. F. Hall	Runge.
Rusk Public School	Ed. Singletary	Rusk.
Saint Jo School	J. E. Park	Saint Jo.
Sam and Will Moore Institute	Geo. Baur	Moulton.
San Angelo High School	Felix E. Smith	San Angelo.
San Antonio Academy	W. W. Bondurant	San Antonio.
San Antonio High School	C. J. Lukin	San Antonio.
San Augustine High School	W. H. Rushing	San Augustine.
Sanderson High School	J. J. Allen	Sanderson.
San Diego High School	D. B. Burrows	San Diego.
Sanger High School	R. Compton	Sanger.
San Marcos High School	G. M. Sims	San Marcos.
San Saba High School	E. S. Repp	San Saba.
Santa Anna High School	Z. D. Jones	Santa Anna.
Scranton Academy	J. E. Temple Peters	Scranton.
Scranton High School	S. P. Collins	Scranton.
Sealy High School	S. S. Boutwell	Sealy.
Seguin High School	R. E. L. Adams	Seguin.
Seymour Public School	W. E. Edelen	Seymour.
Sherman High School	J. C. Pyle	Sherman.
Shiner Public School	T. J. Ponton	Shiner.
Sidney Public School	J. F. Redwine	Sidney.
Sims School for Boys	J. G. Sims	Fort Worth.
Skidmore Public School	J. J. Jenkins	Skidmore.
Slidell High School	W. E. Hutchins	Slidell.

Name.	Superintendent.	Location.
Smith School	Landon F. Smith	Pittsburg.
Smithville High School	J. N. Bigbee	Smithville.
Snyder High School	H. E. Gable	Snyder.
Sonora High School	J. A. Woodford	Sonora.
Sour Lake High School	W. H. Bodenheimer	Sour Lake.
Springtown High School	A. S. Johnston	Springtown.
Spur Public School	S. W. Adams	Spur.
Stamford High School	J. P. Comer	Stamford.
State Institute for Blind	E. E. Bramlette	Austin.
State Orphan High School		Corsicana.
Stephenville Public School	Henry Sims	Stephenville.
Sterling City Public School	B. F. Bennett	Sterling City.
Stratford High School	B. H. Taylor	Stratford.
Strawn High School	L. T. Cook	Strawn.
Sulphur Springs High School	F. V. Garrison	Sulphur Springs.
Summer Hill Select School	L. G. Sumerell	Omen.
Sweetwater High School	M. B. Johnson	Sweetwater.
Talpa Public School	W. W. Wooten	Talpa.
Taylor High School	J. F. O'Shea	Taylor.
Temple High School	J. F. Kimball	Temple.
Teneha Academy	D. A. Leak	Teneha.
Terrell High School	S. M. N. Marrs	Terrell.
Texarkana High School	O. L. Dunaway	Texarkana.
Thomas Arnold High School	S. J. Jones	Salado.
Timpson High School	J. B. Ramsey	Timpson.
Tioga High School	J. A. Giles	Tioga.
Tivy High School	Alvin Dille	Kerrville.
Tolar High School	C. A. Ward	Tolar.
Trinity High School	J. W. Bright	Trinity.
Troup High School	C. A. Lanier	Troup.
Tyler County High School	E. W. Tubb	Woodville.
Tyler High School	W. T. Adams	Tyler.
Uvalde High School	A. W. Evans	Uvalde.
Valentine Public School	Herman Wofford	Valentine.
Valley Mills High School	A. R. Roach	Valley Mills.
Van Alstyne High School	W. F. Barnett	Van Alstyne.
Velasco High School	J. H. DeFee	Velasco.
Venus High School	W. F. Griswold	Venus.
Vernon Public School	B. F. Holcomb	Vernon.
Victoria High School	Miss Alice C. Dean	Victoria.
Waco High School	J. C. Lattimore	Waco.
Waelder Public School	A. V. Peterson	Waelder.
Wallis Public School	Mrs. L. Barnhill	Wallis Station.
Walnut Springs Public School	W. W. Battle	Walnut Springs.
Waxahachie High School	G. B. Winn	Waxahachie.
Weatherford College Training School	F. D. Cavaness	Weatherford.
Weatherford High School	T. W. Stanley	Weatherford.
Weimar Institute	H. R. Bolton	Weimar.
West High School	A. L. Deveney	West.
West Texas Military Academy	Angus McD. Crawford	San Antonio.
White, William L., Public School	W. C. Carrell	Lancaster.
Whitesboro High School	G. W. Acton	Whitesboro.
Whitney Public School	A. D. Clark	Whitney.
Wichita Falls High School	T. L. Toland	Wichita Falls.
Willie Denton College	H. P. Warren	Joshua.
Wills Point High School	E. Core	Wills Point.
Winnsboro High School	J. H. Sheppard	Winnsboro.
Winters Public School	J. W. Lewis	Winters.
Wolfe City High School	E. F. King	Wolfe City.
Wortham High School	D. E. Dean	Wortham.
Wylie High School	J. W. Teasley	Wylie.
Yoakum High School	C. A. Peterson	Yoakum.
Yorktown High School	N. Wilson	Yorktown.
Zephyr High School	J. D. Shaw	Zephyr.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

Gee, Elmer Charles . . . . College Station.
B. S., University of Nebraska, 1913.
Candidate for the Degree of Master of Science.
Herrington, John Anderson . . . . Bryan.
B. S., A. and M. College of Mississippi, 1906.
Candidate for the Degree of Mechanical Engineer.
Hohn, Caesar . . . . Yorktown.
B. S., A. and M. College of Texas, 1912.
Candidate for the Degree of Master of Science.
Johnston, Lemuel Munroe . . . . Bryan.
B. S., A. and M. College of Texas, 1913.
Candidate for the Degree of Mechanical Engineer.
McAdams, Edward E . . . . College Station.
B. S., A. and M. College of Texas, 1911.
Candidate for the Degree of Civil Engineer.
Mansfield, Bruce Jefferson . . . . Columbus.
B. S., A. and M. College of Texas, 1912.
Candidate for the Degree of Civil Engineer.
Moh, Hsiang-yueh . . . . Shanghai, China.
B. S., University of Illinois, 1913.
Candidate for the Degree of Master of Science.
Potts, Arthur Tillman . . . . College Station.
B. S., A. and M. College of Texas, 1907.
Candidate for the Degree of Master of Science.
Wood, Casper Alfred . . . . College Station.
B. S., Kansas State Agricultural College, 1911.
Candidate for the Degree of Master of Science.

UNDERGRADUATE STUDENTS.

Abbreviations.

Ag—Agriculture
Ar—Architecture
AE—Architectural Engineering
Ch—Chemical Engineering
C—Civil Engineering
E—Electrical Engineering
M—Mechanical Engineering
T—Textile Engineering
a—Two-Year Course in Agriculture
t—Two-Year Course in Textile Engineering

'14—Senior
'15—Junior
'16—Sophomore
'17—Freshman
Sp—Special Student
1—First Year of the Two-Year Courses
2—Second Year of the Two-Year Courses

Abbott, John	'16 Ag	Galveston.
Abernathy, Milton Aubrey	'16 C	Paducah.
Adriance, Guy Webb	'15 Ag	Bryan.
Aldridge, Edwin Ernest	'16 M	Eagle Pass.
Graduate Eagle Pass High School.		
Alexander, John Richmond	'15 M	Navasota.
Graduate Navasota High School.		
Allen, Edward Rudge	'17 Ag	Galveston.
Allen, John Spillman	'17 Ar	Palestine.
Allen, Oscar Lamar	1 a	Yoakum.
Allen, Robert Luke	'16 M	Graham.
Graduate Graham High School.		

Allen, Roderick Random...............'15 Ag......Palestine.
Allert, Carlos Carter..................'17 E.......Cuero.
Graduate John C. French High School.
Amsler, Lamar Bennard..............'17 M.......Hempstead.
Graduate Hempstead High School.
Andrews, Dallas Robert...............'16 Ag......Bryan.
Appling, Walter William...............'17 C.......Louise.
Graduate Louise High School.
Aramburu, Enrique.................. 1 a........Mexico City, Mex.
Armstrong, Sam Jones................ 1 a........Purdon.
Armstrong, Ural Stokes...............'17 E.......Plainview.
Graduate Plainview High School.
Arnold, Albert Wendell...............'17 AE......Angleton.
Graduate Angleton High School.
Artusy, Gerald Max....................Sp Ag....Galveston.
Askew, Henry Forest..................'16 M.......Baileyville.
Aston, Andy Chisalem.................'17 E.......Tulia.
Ater, Guy...........................'17 E.......Bertram.
Graduate Bertram High School.
Atkinson, Donald Eustace............. 1 a........Winona.
Atwell, Ulysses Sam..................'16 Ag......Hutchins.
August, Lester Holmes................'16 Ch......Luling.
Graduate Luling High School.
Austin, Buryl Anderson...............'17 Ag......Sterling City.
Graduate Sterling City High School.
Avent, Benjamin Rhette...............'17 C.......Lott.
Graduate Rosebud High School.
Ayers, Ed Lee........................'14 Ag......DeLeon.
Baccus, Embury Depee................'16 E.......Seymour.
Graduate Seymour High School.
Baker, Harlan Kay...................'14 E.......Haskell.
Graduate Houston High School.
Baker, Roy Lee.......................'17 M.......Anson.
Ball, Bertus Clyde....................'14 Ag......Mansfield.
Ballard, John Curtis.................. 2 a........Haskell.
Ballowe, Thomas Randolph............'17 E.......Brazoria.
Barbee, William Terry.................'17 Ag......Hico.
Barnes, James Renfro.................'17 Ag......Chillicothe.
Graduate Chillicothe High School.
Barnett, Curtis Hugh Washington......'16 E.......Caldwell.
Barraco, Victor Anthony...............'15 Ag......Houston.
Barse, William Horace................ 2 a........Fort Worth.
Barton, John Alexander................'17 Ag......Port Lavaca.
Graduate Port Lavaca High School.
Bartosh, Lida........................ 1 a........Wichita Falls.
Bass, Matthew Lloyd..................'17 C.......Houston.
Bates, Clyde Noble...................'17 C.......El Campo.
Graduate El Campo High School.
Bates, Wade Hampton.................'15 E.......Bryan.
Beals, Orville Oliver..................'17 E.......Houston.
Beasley, Jeff Gibson, Jr...............'17 Ag......Cleburne.
Beasley, Wyatt Gristie................'14 Ag......Cleburne.
Beaty, Charles Leoffler................'17 E.......Beaumont.
Graduate San Antonio High School.
Beckmann, Albert Erhard..............'15 Ag......San Antonio.
Bell, Benjamin Franklin............... 1 a........Tyler.
Bell, Jeff Edgar.......................'15 C.......Luling.
Graduate Luling High School.
Bell, Willis Fenton.................... 1 a........Luling.
Bennett, Adam Jackson................'17 E.......Nottawa.
Bennett, Frank Crine..................'16 C.......Henderson.
Bennett, Joel Blackwell................'17 Ag......Hochheim.
Benson, William Thomas...............'17 T.......Eldorado.
Graduate Eldorado High School.

Beringer, Milton Streuer *Graduate Gonzales High School.*	'16 Ch	Gonzales.
Berry, Jack *Graduate Coronal Institute.*	'17 Ag	Pearsall.
Biffle, John Theodrick	'17 Ag	Myra.
Biggers, Chester Arthur	'14 E	Bonham.
Biggers, Vernon Wilson	'17 C	Bonham.
Billups, Val T	'17 Ar	Winters.
Bivins, June	'17 Ag	Longview.
Black, Robert Clyde *Graduate Skidmore High School.*	'16 C	Skidmore.
Black, William Thomas *Graduate McGregor High School.*	2 a	McGregor.
Blakely, William Bassett	'17 Ag	Richmond.
Blalock, Lewis Brown *Graduate Kosse High School.*	'16 E	Kosse.
Blanchard, Kenneth	1 a	Highland Falls, N. Y.
Blanchard, William Wesley	1 a	Highland Falls, N. Y.
Blanton, John Franklin *Graduate Hewitt High School.*	'17 E	Hewitt.
Blasingame, Albert Jerome	1 a	Kemp.
Bledsoe, Albert McQueen *Graduate Cleburne High School.*	'17 Ag	Cleburne.
Bledsoe, William Scott	'17 E	Lubbock.
Boesch, George Darwin *Graduate Whitney High School.*	'17 AE	Whitney.
Bollman, Eric Joseph	'16 Ag	Clarksville.
Bolton, Harrell Thomas	2 a	Waco.
Bonner, Harry Lloyd	'17 Ag	Waco.
Booker, Sam F	1 a	Glen Rose.
Booth, George Edward	'14 M	Chico.
Bosque, Robert Edward *Graduate State Orphan High School.*	'15 Ag	Corsicana.
Boswell, Fredrick Thomas	'17 Ag	Midlothian.
Bouknight, Raymond Andre *Graduate Greenville High School.*	'15 E	Greenville.
Boutwell, William Jones	2 a	Celeste.
Bowles, John Cleveland	'17 C	Rockwall.
Boyett, Douglas Chilton	'14 Ag	Bryan.
Boyett, Guy Frank	'17 C	College Station.
Boyett, Norman Kittrell	1 a	College Station.
Bradley, Earl Iven *Graduate Memphis High School.*	'14 Ag	Memphis.
Bradley, Lewis Lawson	'16 M	Baileyville.
Brailsford, Thomas Reed *Graduate Crockett High School.*	'16 Ag	Latexo.
Bramlette, Frederick Levenworth	'16 C	Longview.
Branson, Alfred Lovell, Jr	'15 M	Marlin.
Braumiller, Nickolaus Mathias *Graduate Texarkana High School.*	'16 M	Texarkana.
Braumiller, Walter Edwin *Graduate Texarkana High School.*	'16 Ag	Texarkana.
Braunig, Carl Francis	'17 Ag	Hallettsville.
Braunig, Hubert Edwin	'14 E	Hallettsville.
Brecher, Edwin Robert *Graduate Breckenridge High School.*	'17 Ag	San Antonio.
Brewster, James Edward, Jr *Graduate Temple High School.*	1 a	Temple.
Bridgwater, Malcolm Macfarlan	'17 E	Schulenburg.
Brigance, George	'16 C	Sherman.
Briggs, Robert Webb	'17 C	Bay St, Louis, Miss.
Briggs, William Hardaway *Graduate Bremond High School.*	'17 C	Bremond.
Briggs, Will Talbot	1 a	Calvert.
Brock, James Russell, Jr	Sp. Ag.	Trenton, Ga.

Brooks, Edward Cottrell	'17 Ag	Bay City.
Broome, William Scott	'14 C	Memphis.
Graduate Memphis High School.		
Broun, Thomas Rogers	'15 Ag	Greenwood.
Browder, Charles Marion	'17 C	Groesbeck.
Graduate Groesbeck High School.		
Browder, John Hosea, Jr	'15 T	Groesbeck.
Brown, Edward Lee	'17 E	Dallas.
Graduate Dallas High School.		
Brown, James David	'16 AE	Rockport.
Graduate Rockport High School.		
Brown, Joe F	'17 Ag	Rock Springs.
Brown, Leslie Walter	'15 Ag	Mathis.
Brown, Mitchell Harvey	'16 E	Rockwall.
Brown, Rodgers Porter	'17 M	Dallas.
Bruce, Andrew Davis	'16 Ag	San Antonio.
Brundrett, Herald McElvaney	'14 Ag	Mesquite.
Bryan, Lester Leon	'17 T	Glen Rose.
Graduate Glen Rose High School.		
Buchanan, Alfred Frederick	'16 C	Brenham.
Graduate Brenham High School.		
Buchanan, Andrew Frederick, Jr	'17 Ag	Sunny Side.
Buchanan, Durant Samuel	'17 Ag	Bryan.
Buchner, Louis McIntosh	'16 Ag	Austin.
Bugbee, John Sherman	'15 Ag	Clarendon.
Bull, Alfred Castleman	'16 Ag	Austin.
Burges, Austin Earl	'15 Ag	Weatherford.
Burkett, Fred	'16 C	Morgan.
Burkett, Harry J	'17 Ar	Galveston.
Burkett, James Marion	'17 Ar	Graham.
Graduate Graham High School.		
Burns, Douglas	'16 Ag	Cuero.
Burrus, Swan Thompson	2 a	Deport.
Camp, George Dashiel	'14 C	San Antonio.
Graduate Walnut Springs High School.		
Camp, Thomas Ringgold	'16 Ar	San Antonio.
Campbell, Archibald Raymond	'15 Ag	Plano.
Graduate Plano High School.		
Campbell, Ray	'16 C	Holliday.
Canion, Claude	1 a	Port Lavaca.
Graduate Port Lavaca High School.		
Cardwell, Jonnie Stell	'16 Ag	Albertville, Ala.
Carleton, Howard Cantrell	'16 Ag	Dallas.
Carpenter, Dudley Rimes	'17 Ag	Texarkana.
Graduate Texarkana High School.		
Carson, Alfred Doughton	'17 Ag	Bryan.
Carson, William Willis	'15 E	Sherwood.
Graduate Sherwood High School.		
Cartwright, Emmit Bea	'17 Ag	Sherman.
Caruthers, Lawrence Haley	'15 E	Alpine.
Graduate Alpine High School.		
Casey, Alfred Cecil	'16 Ag	Rogers.
Cather, Harold Malcolm	'17 M	Waco.
Graduate San Antonio High School.		
Cawthon, Frank Walter	'15 C	Denison.
Graduate Denison High School.		
Cerf, Uriah Moise	1 a	Corsicana.
Graduate Corsicana High School.		
Chambers, David Cheatham	'17 M	New Boston.
Graduate New Boston High School.		
Chappelle, Roy L	'17 Ag	College Station.
Cherry, Thomas Graves	'15 Ag	Giddings.
Graduate Giddings High School.		
Christopherson, George	'17 Ag	Cooledge.
Clark, Samuel Finis	'15 Ag	Hico.
Graduate Hico High School.		

Clarke, Hugh St. Clair	'16 M	Comanche.
Graduate Comanche High School.		
Clarkson, Percy William	'15 E	San Antonio.
Claytor, Edward McRae	'15 E	Campbell.
Clement, Charles Burbank	'14 AE	Port Lavaca.
Cochran, Thomas Beauford	'17 Ag	Austin.
Cockrell, James Bass	'17 Ag	Terrell.
Graduate Terrell High School.		
Cole, Leon Roy	'17 C	Quanah.
Graduate Quanah High School.		
Cole, Noah Davis	'15 E	Bryan.
Cole, Ransom James	'16 Ag	Bryan.
Coleman, Everette Freeman	'16 Ag	Prosper.
Coleman, Frank Ralph	'16 E	Hallettsville.
Graduate Hallettsville High School.		
Coleman, John Everette	2 a	Cotulla.
Graduate Cotulla High School.		
Coleman, William Cowles	'15 Ag	Athens.
Coleman, Wiley Lee	'17 M	Fort Worth.
Collins, Jack Clarence	'15 Ag	Channing.
Graduate Channing Public School.		
Collins, Willie Atmar	'16 Ag	Groveton.
Cone, Joe Milton	1 a	Llano.
Conner, Arch Rice	1 a	Archer City.
Conner, James Augustus	'16 Ag	Lexington.
Graduate Lexington High School.		
Conway, Myron Joseph	Sp Ag	Mission.
Coogle, Jesse	'16 C	Corsicana.
Graduate State Orphan High School.		
Cook, William Berry	'17 Ag	Bryan.
Copeland, Alvin Barnabas	'15 Ag	Huckabay.
Corley, James Robert	2 t	Flatonia.
Cornett, Guy Joris	'16 C	Grandview.
Corry, Hal Francis	'17 E	Rockwall.
Countess, William Stephen	1 a	Maypearl.
Courtney, Olden Key	'14 Ag	Pettus.
Cover, Clarence Carlos	'17 Ag	Elmendorf.
Cover, John Steele	2 a	Elmendorf.
Covey, Cyclone Davis	'17 E	Morgan.
Cox, Carl Clarence	'16 E	Mt. Vernon.
Graduate Mt. Vernon High School.		
Cox, Floyd Alonzo	'17 C	Whitney.
Graduate Whitney High School.		
Cox, Noland Charles	'17 Ag	Groveton.
Cozby, George Lewis	1 a	Azle.
Craig, Charles Elbert	'17 C	El Campo.
Graduate El Campo High School.		
Craig, Samuel Reid	'17 C	El Campo.
Graduate El Campo High School.		
Craig, William Carmichael	Sp Ag	Brownsville.
Crawford, Vernon William	'16 Ag	Fort Stockton.
Crisp, Marshall Claiborne	'15 Ar	Cuero.
Graduate John C. French High School.		
Crocker, William Jennings	'16 E	Dallas.
Crockett, Floyd Marion	'16 C	Prosper.
Croom, Guy	'16 M	Elmina.
Crow, Glenn Columbus	'17 C	Willis.
Crow, Louie Conley	2 a	Meridian.
Crown, Phil Theodore	'15 AE	Waco.
Curnutte, James Vincill	'16 C	Snyder.
Graduate Snyder High School.		
Curtis, Wyman Broun	'17 Ag	Sunny Side, Ark.
Darby, James Andrew	'17 E	San Antonio.
Daugherty, Martin Marion	'16 Ag	Alpine.
Davidson, Grover Randal	'17 Ag	Bertram.
Graduate Bertram High School.		

Davis, Charles Jester....................'15 Ag......Corsicana.
Graduate Corsicana High School.
Davis, Dean..............................'15 E.......Dawson.
Davis, Grandville Ewing............... 2 a........Grandview.
Davis, Stanley Forrest.................'15 Ag......San Antonio.
Graduate San Antonio High School.
Davis, Thomas Charlton...............'14 C.......Poteet.
Graduate Bronson High School.
Davis, William Kinnard...............'15 E.......Hico.
Graduate Hico High School.
DeLong, Raleigh.......................'15 M.......Mexia.
Denning, Charles Oscar...............'17 M.......Mexia.
Graduate Mexia High School.
Dennis, Leon Chapman................'16 Ag......Prince Bay, N. Y.
Densmore, Ralph Albert...............'15 C.......Dallas.
Densmore, Robert Earl................'15 C.......Dallas.
Denton, Velpean Curlee...............'15 C.......Whitewright.
Dickie, Alexander......................'16 E.......Breckenridge.
Graduate Breckenridge High School.
Dickie, Byron Homer..................'15 E.......Breckenridge.
Graduate Breckenridge High School.
Dieterich, Herman Frank..............'17 Ag......Dallas.
Dillashaw, Rowland Harry.............'17 AE......Gatesville.
Dillon, Roy Eustuce.................. 1 a........Judkins.
Dodd, Grover Cleveland...............'15 Ag......Clarksville.
Graduate Dodd City High School.
Dodson, Alfred Ewing................. Sp Ag...Petersburg.
Donoho, Devada Lewis.................'16 Ag......George.
Doucette, Fred Louis..................'17 E.......Grayburg.
Graduate Sour Lake High School.
Douglas, Guy McDavid.................'17 C.......Sterling City.
Graduate Sterling City High School.
Duck, Ira B........................... 2 a........Proctor.
Dudley, Howard Waller................ 1 a........Hillsboro.
Graduate Hillsboro High School.
Duncan, Mofford Slawson..............'17 Ag......Killeen.
Graduate Killeen High School.
Dunkle, Paul Burtch...................'17 Ag......Lelia Lake.
Dunning, George Rutledge.............'15 Ch......Gonzales.
Dutton, Carl Arden....................'17 M.......Waco.
Graduate Waco High School.
Dycus, Standish Gage..................'17 Ag......Dallas.
Dyer, Fletcher Floyd...................'16 M.......Barstow.
Dyer, Scott Bruce......................'17 E.......Tulia.
Eagleston, Charles Moulton Clark......'15 Ag......Smithville.
Earnest, Lawrence Howell.............'17 C.......Dolores.
Graduate San Antonio High School.
Easley, Claudius Miller................'16 AE......Waco.
Graduate Waco High School.
Edrington, Henry Clay.................'17 Ag......Fort Worth.
Ehlers, Alfred..........................'17 AE......LaGrange.
Graduate LaGrange High School.
Ehlert, John Charles Frederick.........'16 Ag......Brenham.
Eiland, Ernest Ralph...................'15 Ag......Rockdale.
Elam, William Nile.....................'17 Ag......Ohio.
Eldridge, Herbert.......................'17 C.......Pineland.
Graduate Buna High School.
Elliott, George Monroe................ 1 a........Paris.
Elliott, Robert Drane..................'17 E.......Corsicana.
Graduate Corsicana High School.
Elliott, Walton Henderson............. Sp Ar....Greenville.
Graduate Greenville High School.
Ellis, Howard Ferguson.................'15 Ag......Abbott.
Enloe, Guy.............................'17 E.......Saratoga.
Graduate Santa Anna High School.

Erskine, Wood Steele	'16 E	San Antonio.
Eschenburg, Arthur Carl	'16 Ag	Floresville.
Everett, George Dudley *Graduate Dallas High School.*	'15 Ag	Dallas.
Faber, Bennie Herman *Graduate Eagle Lake High School.*	'15 C	Eagle Lake.
Fairchild, William Seley	'17 Ag	Taylor.
Farthing, William Eugene	'14 C	Valley View.
Farthing, Welbourne Owen	'17 Ag	Valley View.
Findlater, John Corscaden	'17 E	San Angelo.
Fisher, John Kerwin Godfrey	'14 Ag	Fort Worth.
Flach, Ernest Kapp	'17 Ag	Comfort.
Fleming, Charles Herman *Graduate Fort Worth High School.*	1 a	Merit.
Floyd, Nathaniel Brelford	'16 Ag	Pledger.
Forsyth, George Alexander *Graduate McKinney High School.*	'17 M	McKinney.
Forsyth, William Russell *Graduate McKinney High School.*	'15 M	McKinney.
Foster, Charles Darwin	'17 Ag	Riesel.
Foster, Clayton Jones *Graduate North Texas State Normal.*	'16 Ag	Denton.
Foster, Julian Lewis	'15 E	Fort Worth.
Foster, Wilbur Carradine	'17 Ag	Opelousas, La.
Fouraker, Harold Edgar *Graduate Dallas High School.*	'17 E	Dallas.
Fouraker, Leroy Levi *Graduate Dallas High School.*	'14 E	Dallas.
Fouraker, Raymond Spivey *Graduate Dallas High School.*	'14 E	Dallas.
Francis, William Bebb *Graduate Allen Academy.*	'15 Ag	College Station.
Francisco, Edgar Oliver	'15 C	Coalgate, Okla.
Frazier, Harris Lamar *Graduate Tyler High School.*	'17 E	Tyler.
Fry, Curtis Lozelle	'17 Ag	Denton.
Fry, Homer Lee *Graduate Denton High School.*	'17 E	Denton.
Fuchs, John William	'17 E	Round Rock.
Fuess, Carl Andrew	'16 AE	Cuero.
Galliford, Walter Thomas *Graduate Palacios High School.*	'17 M	Galveston.
Gallman, Doyle Murphy	'16 Ag	Bartlett.
Gammill, Harold Harper	'15 Ag	Bryan.
Gardner, Jesse Cornelius	'17 Ag	Terrell.
Gardner, Neil Ethridge, Jr *Graduate Granger High School.*	'17 Ar	Troy.
Garitty, John Patterson	2 t	Corsicana.
Garrett, Melrose Truett *Graduate Crawford High School.*	'16 Ag	Merrimac.
Garrison, Richard Eugene *Graduate Pilot Point High School.*	'17 M	Pilot Point.
George, Cicero Jackson *Graduate Douglas Select School.*	1 a	Waco.
Gibbens, Ernest	'14 Ag	Kerrville.
Gibbs, John Lawson *Graduate Burnet High School.*	'17 M	Burnet.
Gibson, Manly Broadus *Graduate Angleton High School.*	'17 Ag	Angleton.
Giesecke, Edward	'17 Ag	Ballinger.
Gilfillan, Max Dole	'17 Ag	St. Johnsbury, Vt.
Gill, Hugh	1 a	Houston.
Gillespie, Jack Cole	'17 Ag	Dallas.
Gillespie, William Edmonson	1 a	Alleyton.
Gillespie, William Spence	'15 C	Houston.

Gilley, Burns Ingram	'17 Ag	Caldwell.
Girardeau, Edward Reed, Jr	'15 Ag	Galveston.
Graduate Ball High School.		
Givens, George Thomas	'17 Ar	Dallas.
Glasgow, Herschel	'17 C	Alvarado.
Graduate Alvarado High School.		
Glaze, Wesley Ogden	'15 E	San Antonio.
Glover, Rufus Elliott	1 a	San Antonio.
Godwin, Zooling Andrew	'17 E	Temple.
Graduate Temple High School.		
Goen, Preston Soles	1 a	Bryan.
Gooch, Roy Branch	'16 M	Temple.
Graduate Temple High School.		
Goodwin, James Calvin	'14 Ag	Beaumont.
Graham, Cyrus Earle	'16 Ag	Bryan.
Gray, James William	'17 E	Caldwell.
Graduate Caldwell High School.		
Gray, Oscar Somers	'16 Ag	Terrell.
Graduate Terrell High School.		
Greathouse, Thaddeus Allen	'17 Ag	Austin.
Green, Perry Roberts	'17 C	Waco.
Graduate Waco High School.		
Green, Roy	'14 Ag	Floydada.
Green, John Wikoff	Sp Ag	Liberty, Mo.
Green, Ossie Wendelken	'15 Ag	Comanche.
Grimes, William Ezekiel	1 a	Milford.
Groginski, Philip S	'14 E	Bryan.
Gunn, Clifton Henry	'16 Ag	Waelder.
Haden, Julian Frank	'15 Ar	Timpson.
Graduate Timpson High School.		
Hafner, Vernon Etter	'17 AE	Greenville.
Graduate Greenville High School.		
Hagaman, Leslie Hilsman	'16 C	Ranger.
Hagan, Thomas Edison	'16 Ag	Troup.
Hail, Irma	1 t	Bonham.
Haines, Paul Graves	'17 Ag	Gatesville.
Hajek, William Stephan	'16 T	Bryan.
Graduate Allen Academy.		
Halbedl, Clifton Charles	'17 Ag	San Antonio.
Graduate San Antonio High School.		
Hall, George Graham	Sp Ag	Houston.
B. S., A. & M. College of Texas, 1913.		
Hall, Robert Alison	'16 Ag	Tarkington Prairie.
Haller, Clarence Francis	'15 Ag	Victoria.
Haller, Raymond Burton	'15 Ag	Victoria.
Halsey, Frank Wilbur	'17 Ag	St. Johnsbury, Vt.
Hamerly, Jewel Silas	'16 M	Oakhurst.
Hamilton, George Buchanan	1 a	Houston.
Hamlet, Claron Bailey	'17 Ag	Nome.
Hamner, Edward Joe, Jr	'17 Ag	Sweetwater.
Hanson, Gordon Bell	'17 E	Tyler.
Graduate Tyler High School.		
Hanson, John Lynd	1 a	Brownsville.
Hanson, Wrathall King	'16 Ag	San Antonio.
Hanway, John Thomas, Jr	'17 T	Bryan.
Graduate Allen Academy.		
Hargett, Frederick	'15 C	Texarkana.
Harrell, James Wilson	'17 AE	Mt. Vernon.
Graduate Mt. Vernon High School.		
Harris, Henry Clay	'17 Ag	Dallas.
Graduate Greenville High School.		
Harris, Munroe	'17 E	Houston.
Harrison, Julius Caesar	'14 M	Stockdale.
Graduate Stockdale High School.		

Harrison, Julian P....................'17 E.......Marshall.
Graduate Marshall High School.
Harriss, David Lonnie.................'17 Ar......Rockdale.
Graduate Miles High School.
Hausser, Charles......................'16 Ag......Eagle Pass.
Hawes, Roscoe.........................'16 C.......San Antonio.
Graduate Uvalde High School.
Hawkins, Alden Riley..................'16 AE......Dallas.
Hawley, George Cressey................'16 C.......Kingsville, Ohio.
Haynes, Sylvan Blum...................'15 Ar......Port Arthur.
Graduate Port Arthur High School.
Heath, Richard Hardy..................'17 Ag......Pittsburg.
*Hector, Wallace Bryan................'15 Ag......Alpine.
Hedges, Colonel Nugent............... 1 a........Mossville.
Graduate Gainesville High School.
Hefner, Charles Balser................'16 E.......Cuero.
Graduate John C. French High School.
Heilig, Gustav Alexander..............'17 AE......LaGrange.
Graduate LaGrange High School.
Heldenfels, Grover Cleveland..........'16 Ag......Beeville.
Helm, Dury Lane.......................'16 Ag......Clifton.
Graduate Clifton High School.
Hemphill, James Andrew................'17 M.......Richmond, Ark.
Henderson, John Marion............... Sp Ag....Waelder.
Henley, Ernest Nelson.................'16 C.......Brackettville.
Henry, Julian Lemonde.................'16 Ag......Lancaster.
Herrington, James Joseph, Jr..........'14 M.......Neshoba, Miss.
Hervey, Stewart Darden................'17 Ag......Galveston.
Hester, Jesse Walton..................'17 AE......Colorado.
Hicks, Jesse William..................'17 Ag......Canyon.
Graduate Canyon High School.
Hill, Martin Elmo.....................'15 Ag......Eastland.
Hill, Robert Aaron................... 1 a........Austin.
Hill, Ralph Edwin.....................'17 E.......El Campo.
Graduate El Campo High School.
Hill, Scott Shelby....................'14 E.......Sandy.
Graduate Allen Academy.
Hinds, Gordon Ferguson................'17 E.......Bullard.
Graduate Bullard High School.
Hobbs, Leonard Sinclair...............'15 M.......Brownsville.
Graduate Brownsville High School.
Hockaday, Frederick James............ 1 t........Bowie.
Hockaday, Irving Thomas...............'16 E.......Bowie.
Hodgson, Albert Lee.................. 1 a........Mazomanie, Wis.
Hoepfner, Fred William................'14 Ag......Houston.
Hogue, Aubrey Lynn....................'16 Ag......Paris.
Graduate Paris High School.
Hogue, Ernest Newton..................'15 E.......Paris.
Graduate Paris High School.
Hohn, Alexander.......................'17 E.......Yorktown.
Graduate Yorktown High School.
Holick, Edward Weldon................ 2 a........Bryan.
Holland, Horace Furman................'17 E.......Jefferson.
Graduate Jefferson High School
Holland, Jesse Mercer, Jr.............'17 M.......Lakeland, Fla.
Hollingshead, Frank Adolphus..........'16 Ch......Ganado.
Holloway, Louis Edward................'15 Ag......Dallas.
Holman, Jesse Rogers................. 2 a........Weimar.
Graduate Weimar Institute.
Holmes, Neill Shaw....................'17 Ag......Fayetteville, N. C.
Homann, Frederick Adolph..............'15 M.......New Braunfels.
Graduate New Braunfels High School.

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*Deceased.

Hook, Donnie Leon	'16 C	Denison.
Graduate West High School.		
Hooker, Guy Burch	'17 M	Silsbee.
Hoppe, Roland Charles	'17 M	Cypress Mills.
Horn, Jeffie Neal	'17 Ag	Athens.
Graduate Athens High School.		
Hubbard, Edmund Paul	'17 E	Lampasas.
Graduate Lampasas High School.		
Hudson, Gay	'15 Ag	Celeste.
Hudson, Murray Edward	'17 E	Abilene.
Hudspeth, Clarence Chancey	'15 E	Hondo.
Huebner, Louis Henry Alfred	'17 Ar	Shiner.
Graduate Shiner High School.		
Hurdle, Eugene Franklin	'15 C	Slayden, Miss.
Hurt, Wilbur Torney	Sp Ag	Dallas.
Irby, Arthur Henri	'14 Ag	Beaumont.
Graduate Beaumont High School.		
Irby, Benjamen Earle	'17 Ar	Beaumont.
Graduate Beaumont High School.		
Iriarte, Fernando	'17 M	Mexico City, Mexico.
Isbell, Lester Livingston	'17 Ag	Uvalde.
Jackson, John Henry	'17 Ag	Kosse.
Jackson, William Halbert	'15 C	Graham.
Jackson, Willie Wood	'17 Ag	Liberty Hill.
James, James Ray	'17 E	Hamlin.
Graduate Hamlin High School.		
James, Origen Jewett	'14 Ag	Monclova, Coah., Mex.
Jantzen, Henry William	Sp Ag	Paige.
Jarrett, Ed. Lee	'15 E	Valley Mills.
Graduate Valley Mills High School.		
Jarrett, J. C., Jr	'17 C	Valley Mills.
Graduate Valley Mills High School.		
Jarvis, Fred Bond	1 a	Leakey.
Jarvis, Joseph Robert	'15 Ch	Brandon.
Graduate Brandon High School.		
Jenkins, Joe Alphaeus	'17 Ag	Caldwell.
Graduate Caldwell High School.		
Jennings, Albert Lawrence	'14 M	Kosse.
Graduate Kosse High School.		
Jennings, Edgar Petty	'15 Ag	Martindale.
Graduate Martindale High School.		
Jennings, Robert Quincy	'17 Ag	Martindale.
Graduate Martindale High School.		
Jobson, Charlie Culberson	'17 E	Mesquite.
Johnson, Albert Denarvous	'16 Ag	Kaufman.
Johnson, Harry Hubbard	'17 Ag	Eagle Lake.
Johnson, James Henry	'17 E	Bertram.
Graduate Temple High School.		
Johnson, Olaf Konstantine	'17 Ar	Waco.
Graduate Douglas Select School.		
Jones, Arthur Orlander	'17 E	Chillicothe.
Graduate Chillicothe High School.		
Jones, Lloyd Clifton	2 a	Bono.
Jones, Lafayette Poindexter	'15 Ag	Temple.
Jones, Roy Colster	'17 Ag	Myra.
Jones, William Echols	2 t	Utopia.
Jones, William Tingnal	'14 E	Sinton.
Jopling, Homer Augustus	'16 AE	Wharton.
Graduate Trinity High School.		
Jordan, Alvin Wayne	'17 C	Meridian.
Graduate Meridian High School.		
Jordan, George Frank	1 a	Nacogdoches.
Graduate Nacogdoches High School.		
Jordan, Gilbert Frederick	'14 Ag	Fredericksburg.
Jourdan, Harry	'17 Ag	Del Rio.

Joy, Whitney Orvan	'16 E	Ingram.
Joyce, John Berry	'17 E	Brady.
Keahey, Ray Dewitte	'17 Ag	Rockwall.
Keasler, Thomas Frank	'16 Ag	Mineral Wells.
Kelly, David Cleveland	'16 Ch	Greenville.
Graduate Greenville High School.		
Kelly, Thomas James	'17 Ar	Beaumont.
Graduate Beaumont High School.		
Kerbow, Herbert Ralph	'16 Ar	Clarendon.
Kiber, Daniel Henry	'16 M	Corsicana.
Graduate Corsicana High School.		
Kiesling, Justin Alucius	'15 E	Houston.
Graduate Houston High School.		
Killough, David Thornton	'14 Ag	Galveston.
Killough, Hugh Baxter	'16 Ag	Center Point.
Kincheloe, James Matson	'15 Ag	Hubbard.
Kinnard, Albert William, Jr	'15 Ag	Bryan.
Klug, Harry Veatch	'16 Ag	Dearborn.
Knolle, Miles	'15 Ag	Industry.
Knox, George Pierce	'14 Ar	San Antonio.
Kothmann, Damon Harry	1 a	Castell.
Kotzebue, Leon Lightner	'17 Ag	Flatonia.
Graduate Flatonia High School.		
Kotzebue, Meinhard Henry	'14 M	Flatonia.
Graduate Flatonia High School.		
Kristek, George Henry	'16 E	Flatonia.
Kroschel, John Anthony Forest	'17 E	Hallettsville.
Graduate Hallettsville High School.		
Kurtz, Lawrence A	'17 E	Seadrift.
Landers, Jesse C	'17 Ag	Cleburne.
Lane, George Irvin	'14 Ag	Valley Mills.
Langford, Ivan	'17 E	Georgetown.
Langley, Samuel Gallatin	'17 Ag	Bullard.
Lawson, Roy	'17 E	Burleson.
Leary, John Benjamin Rex	'17 Ag	San Antonio.
Graduate Corpus Christi High School.		
Lee, Homer Goodson	1 a	Comanche.
Lee, Thomas Nugent	1 a	Eckert.
Lenert, August Albert	'14 Ag	LaGrange.
Graduate LaGrange High School.		
Letot, Alfred Eugene	1 a	San Antonio.
Levy, David Henry	'14 E	Waco.
Graduate Waco High School.		
Lewis, Henry Stanley	Sp Ag	La Porte.
Lill, John Frank	1 a	Panhandle.
Little, Thomas Ewing	'16 Ag	Harleton.
Lloyd, Emil Edward	'17 E	Italy.
Graduate Italy High School.		
Lochridge, Robert Napoleon	'16 Ag	Iowa Park.
Lockett, William Cureton	'16 E	Cleburne.
Long, Aretas William	1 a	Childress.
Long, Brevard Stephenson	'17 E	Haskell.
Graduate Haskell High School.		
Long, George Alvin	'17 Ag	Greenville.
Lowry, Richard Cohron	'17 M	San Antonio.
Lucky, Maurice Cecil	'17 E	Saragosa.
Luedtke, Edward Henry	2 a	McGregor.
Lyle, Francis Marion	'17 Ag	Quinlan.
Graduate Quinlan High School.		
Lyne, Eugene Scott	'17 M	Houston.
McBirney, William Carter	'16 Ag	Pecos.
McCampbell, Robert Floyd	1 a	San Antonio.
McCarty, Stuart Clare	'15 C	Taylor.
McCollum, Hollie Travis	'15 Ag	Valley View.
McConnell, Mosey Walker	'17 Ag	Gordonville.

McCorkle, George McCutchen	1 a	Godley.
McDaniel, George Edward, Jr	'17 C	Mertens.
MacDonnell, George Burleson	'16 Ag	Austin.
McDowell, John Clifton	'14 Ag	Trinity.
Graduate Groveton High School.		
MacFadden, Samuel Poole	'16 E	San Antonio.
Graduate San Antonio High School.		
McFerran, Luther	1 a	Graham.
Graduate Graham High School.		
McGilberry, Alton Earl	'16 Ag	Shiro.
McGinnis, Perry Temple	'14 Ag	Terrell.
McGown, Grover Clifford	2 a	Fort Worth.
McGregor, Gilbert	'17 Ag	Caldwell.
Graduate Caldwell High School.		
McGregor, Joel Ira	'16 Ag	Millican.
McIver, James Dalrymple	'16 Ag	Lexington.
McKnight, John Banning	'17 Ag	Brady.
McMillan, Roy Dillard	'17 Ag	College Station.
McMurtry, Joseph Homer	1 a	Windthorst.
McMurtry, John Lester	1 a	Jermyn.
Malloy, Henry Platter	'16 Ag	Palestine.
Mann, John Adam	'17 Ag	Dallas.
Mansker, William Pierce	'17 M	Moody.
Marquess, Harry Clyde	'17 Ag	Calvert.
Graduate Calvert High School.		
Marquez, Miguel	'17 M	Mexico City, Mexico.
Marrs, Cecil Douglas	'16 C	Terrell.
Graduate Terrell High School.		
Martin, Charlie Brady	'16 Ag	Bryan.
Martin, Daugherty Exline	'17 C	Waxahachie.
Martin, Paul Henry	2 a	Mason.
Martin, Sam Winford	'17 Ag	Morgan.
Martin, William Patrick	'15 Ag	Rotan.
Mason, Stephen Kearny	'15 C	San Antonio.
Mather, Frank Collins	'17 E	Houston.
Mathewson, LuVerne Merton	'16 Ag	Aurora, Illinois.
Mathis, William Fowler	1 a	Kemp.
Matthews, Jim Gahagan	'17 E	Greenville.
Mattox, Jesse Kuykendall	'17 E	Greenville.
Graduate Pearsall High School.		
Mauldin, Edward	'16 E	Lancaster.
May, Robert Livingston	1 a	Tolbert.
Mayers, Hadyn Potter	'14 C	San Antonio.
Mayo, Harry Mash, Jr	'15 Ag	Houston.
Meinscher, William Ernest August	2 a	Leroy.
Melton, William Brisco	'14 Ag	Hutchins.
Menke, Edgar Paul	'16 Ag	Hempstead.
Menn, Hubert Leopoldt	'17 Ag	Yorktown.
Graduate Yorktown High School.		
Menzies, William	'17 Ag	Menard.
Mercer, Vandal Day	'17 E	Chilton.
Graduate Douglas Select School.		
Meriwether, Gay Clifford	'15 E	Tampico, Mexico.
Metcalfe, Penrose Blakely	'16 Ag	San Angelo.
Metcalfe, Samuel Little	'17 Ag	Pearsall.
Graduate Pearsall High School.		
Meyer, James Victor	'16 Ag	Flatonia.
Graduate Flatonia High School.		
Millikien, Marion Alvin	1 a	New Waverly.
Miller, Arthur Charles	'14 Ag	New Ulm.
Miller, Alden Deloss	'17 E	Denton.
Graduate Denton High School.		
Miller, Avery Rubean	'16 Ag	Huckabay.
Miller, Clarence Leneal	'17 E	Alvin.
Graduate Alvin High School.		

Miller, Herman Edward	'16 Ag	Bellville.
Miller, James Edgerly	'17 Ag	Sandusky, Ohio.
Miller, Vance Woody	'14 E	Springtown.
Mills, Clyde Atteberry	1 a	Lancaster.
Milner, Drinkard Blacknall	'17 Ar	Henderson.
Mitchell, George William	'15 M	San Marcos.
Mitchell, Merlin	'17 Ag	Gainesville.
Graduate Gainesville High School.		
Mittanck, Erwin Albert	2 t	Kerrville.
Moffett, George Clarence	'16 Ag	Chillicothe.
Graduate Chillicothe High School.		
Mogford, Joseph Sayers	'16 Ag	London.
Montague, Frank Orum	'15 Ag	Rockdale.
Graduate Rockdale High School.		
Montgomery, Roark	'17 Ag	Corsicana.
Montgomery, Samuel	'15 C	Corsicana.
Moore, Buhl	'17 C	Smithville.
Graduate Smithville High School.		
Moore, Isaac George	'17 T	Hubbard.
Moore, John Hartwell	'15 Ag	DeKalb.
Moran, James Edward	'17 Ag	Gordonville.
Moreland, Banks George	'17 Ch	Fort Worth.
Graduate Fort Worth High School.		
Morgan, Henry Julius	'16 C	Temple.
Graduate Temple High School.		
Morgan, John	'16 C	Bronson.
Morris, Sam Wilson	'17 AE	San Augustine.
Morris, Thomas Kyle	'16 Ag	Valley Mills.
Graduate Valley Mills High School.		
Morrison, Otho Key	'17 C	Hamilton.
Graduate Hamilton High School.		
Morrow, Joseph Spencer	1 a	Arlington.
Moses, Andrew	'16 Ag	Lampasas.
Graduate Lampasas High School.		
Moss, Mac Augustin	'15 C	Izora.
Moursund, Lief Erik	'15 E	Fredericksburg.
Mower, Robert Lefferts	2 t	Corsicana.
Mowery, Irl Halden	'15 Ag	Almeda.
Muckleroy, James Hamilton	'17 Ag	Tilden.
Mullin, William Harris	'16 Ag	Winters.
Murphy, William Michael	'16 Ch	Quanah.
Graduate Quanah High School.		
Mynatt, Jesse Herman	'16 E	Gunter.
Nash, John Forbes	'15 E	Belton.
Nash, Jesse Ghent	'17 M	Belton.
Graduate Belton High School.		
Nesmith, Oscar	'16 Ag	Ryan, Oklahoma.
Graduate Eden High School.		
Ness, Cornelius Lee	'17 C	College Station.
Newman, Lewis	'17 Ag	Matador.
Nisbet, Walker Robert	'16 Ag	San Angelo.
Noack, Roland Rufus	'17 M	Navasota.
Nowlin, Henry Burford	1 a	Valley Mills.
Graduate Valley Mills High School.		
O'Brien, Floy	'16 E	San Antonio.
Graduate State Orphan High School.		
O'Conor, Robert	'16 Ag	Laredo.
Oberthier, Fred Holmsley	'17 Ag	Hereford.
Oglesby, Enslie Orsen	'16 E	Mertzon.
Olson, Oscar Rudolph	'16 M	Galveston.
Olson, Palmer Henry	'16 C	Clifton.
Graduate Clifton High School.		
Otto, John August	'16 Ag	Ottine.
Overstreet, Andrew Madison	'15 Ch	Fort Worth.
Graduate Fort Worth High School.		

Palmer, George Clark	'15 Ag	Dunn.
Palmer, Virgil Harris	'17 M	Mission.
Parker, Benjamin Joseph	'17 Ag	Vernon.
Graduate Vernon High School.		
Parker, Earl	'14 E	Carthage.
Parks, John Duncan	'17 Ag	Rusk.
Parr, Virgil Verser	'14 Ag	Waelder.
Pate, John Elmer	'17 Ag	Bryan.
Patterson, Edwin Bridgers	'16 E	Goodnight.
Pattie, Don Hufford	'16 Ag	Van Alstyne.
Graduate Van Alstyne High School.		
Peabody, Albert Lawson	'17 Ag	Corpus Christi.
Graduate Fort Worth High School.		
Peavy, Sterling Alexander	'17 C	Brownwood.
Pedigo, Maxie Smith	'16 Ag	Valley Mills.
Graduate Valley Mills High School.		
Pendergrass, Albert Grider	'17 E	Leonard.
Graduate Leonard High School.		
Pepper, John Wilson	'17 Ag	Rock Springs.
Perkins, Paul Richards	'16 Ag	Nacogdoches.
Graduate Nacogdoches High School.		
Perrin, Arthur Charles	'17 M	Boerne.
Perrin, Stanley Ezra	'17 Ag	Boerne.
Perrine, Nat Smith	'17 Ar	Fort Worth.
Graduate Fort Worth High School.		
Person, Leo King	Sp Ag	Lewisville, Ark.
Persons, David Henry	'15 Ag	Hico.
Graduate Hico High School.		
Peters, Edgar Milton	'15 Ag	Hondo.
Graduate Marshall Training School.		
Peters, Noah Linton	'17 AE	Hondo.
Graduate Hondo High School.		
Peterson, Joseph Arvid	'14 M	Louise.
Graduate Louise High School.		
Peutet, Jean Paul	2 a	Dallas.
Phillips, Frank Robert	'15 T	Perry.
Phillips, Frank Roy	'14 Ag	Denton.
Graduate North Texas State Normal.		
Phillips, James Kolb	'17 Ag	Rockdale.
Pickens, Dennis Brandt	'14 E	Wallis.
Graduate Wallis High School.		
Pierson, John Cleveland	'16 Ag	Haskell.
Graduate Haskell High School.		
Pinkston, Lucian Albert	'16 M	Corsicana.
Pitts, Claude Noel	'16 E	Onalaska.
Platt, George Alfred	1 t	Houston Heights.
Poch, John	'17 Ag	Yorktown.
Poetter, Norman Mitchell	'15 M	Franklin.
Ponder, Leander Elvin	'17 Ag	Bryan.
Porter, Thomas Sharp	'16 Ag	Boyd.
Powell, Louis Hamilton	'14 C	Baird.
Powers, Garland Arch	'17 Ag	Lockhart.
Prell, Randolph Fred	'17 Ag	Brazoria.
Prestridge, Kenneth Kade	'17 C	Alvarado.
Graduate Alvarado High School.		
Prewett, Roma Charles	'17 Ag	Fort Worth.
Price, Byron James	1 a	Nacogdoches.
Priester, Lewis Arnold	'17 E	Richmond.
Graduate Richmond High School.		
Puckett, Cyrus Wells	2 a	Silverton.
Punchard, Herbert Gillespie	'17 Ag	Riesel.
Raborn, Garland Walter	'17 C	Weatherford.
Rack, Edgar Charles	'15 E	Waco.
Graduate Douglas Select School.		
Randal, Horace Gibson	1 a	Brownfield.

Ransom, Robert Jerrod	'17 C	Richmond.
Graduate Richmond High School.		
Ray, Paul Franklin	'16 Ag	Belton.
Graduate Belton High School.		
Read, William Kyle	1 a	Deport.
Redlich, Frederick William	Sp AE	College Station.
B. S., Polytechnic Institute, Stuttgart, Germany, 1905.		
Reed, William Neal	'14 Ag	Sterling City.
Graduate Sterling City High School.		
Regenbrecht, Edward Michael	'17 Ag	Sealy.
Graduate Sealy High School.		
Regenbrecht, Ferdinand	'16 E	Sealy.
Graduate Sealy High School.		
Reily, Paul Patrick	'17 E	D'Hanis.
Reynolds, James Boone	2 t	Buck.
Reynolds, William LaFayette	'15 M	Buck.
Graduate Livingston High School.		
Rhodes, Henry Gholson	'15 Ag	Bryan.
Rhodes, James Efford	'15 T	Iola.
Rice, Roy Emmett	'17 Ag	West Plains, Mo.
Rich, Lucian Guy	'14 Ag	Forest.
Richardson, John	Sp Ag	Mexia.
Graduate State Orphan High School.		
Richardson, James Samuel	'16 Ag	Henderson.
Ridder, Louis Fred	'17 Ag	San Antonio.
Riesner, Edmund Laritz	'16 C	Houston.
Ripple, Joe Edward	'17 Ag	Caldwell.
Robert, Jack Baker	'16 Ag	Albany.
Roberts, Paul Vane	'15 C	Taft.
Robertson, John Marshall	'15 M	Ganado.
Robison, John Elbert, Jr	1 a	Prosper.
Roe, Peter Henry	'17 E	San Antonio.
Rogers, Ray J	'17 M	Buda.
Rogers, Victor Lee	'16 Ag	Kountze.
Graduate Buna High School.		
Rollins, John Wesley	'16 Ag	China.
Rollins, Millard Elisha	'14 M	Merit.
Romberg, Felix Berthold	'17 Ag	Holland.
Graduate Holland High School.		
Von Rosenberg, Leslie August	'16 Ar	Hallettsville.
Graduate Hallettsville High School.		
Rosenfield, Joseph Levy	'16 C	Galveston.
Rosson, John Keighton, Jr	1 a	Fort Worth.
Rothe, Hans Hugo	'16 Ar	Hondo.
Graduate Hondo High School.		
Rountree, John Blackwell	'17 Ag	Rockdale.
Royse, Frank Alexander	'16 E	Royse City.
Runge, Hans Eyl	'16 T	Galveston.
Runge, James Forest	'14 Ag	Galveston.
Russell, George Hill	2 a	Cotulla.
Graduate Cotulla High School.		
Rust, Charles Edward	'16 Ag	Galveston.
Rutan, Wilton Lynn	'15 Ar	Port Arthur.
Graduate Port Arthur High School.		
Rutherford, James Rector	'17 E	Hereford.
Rutter, William Warren	'16 C	Topeka, Kansas.
Sanders, Andrew Newell	'17 T	Lavernia.
Graduate Lavernia High School.		
Sanders, Irl Nowlin	'16 M	Bryan.
Graduate Bryan High School.		
Sanders, James Leander	'15 Ag	Lavernia.
Sanders, Marion Dewitt	'15 Ag	Hubbard.
Sandidge, Julian Wright	'17 M	Fort Worth.
Sansom, George Wallace	'15 T	Groesbeck.
Graduate Mart High School.		

Saper, Gustave Alexander	'15 Ch	Houston.
Savage, Carl Hamilton	'15 Ag	Bailey.
Savage, Marshall Edward	'17 C	Florence.
Graduate Florence High School.		
Sawyer, Horace Adali	'16 C	Fate.
Scasta, Jerry Joe	'17 Ag	Wheelock.
Schadt, Ewald Keller	'16 E	Galveston.
Graduate Ball High School.		
Schaefer, Robert	1 a	Converse.
Schaefer, Seley Eugene	'14 M	Waco.
Schattel, Frank Bruno Emil	1 a	Hungerford.
Schattel, Joe Isidor	Sp Ag	Hungerford.
Schepps, Julius	1 a	Dallas.
Schimmelpfennig, William Harrington	'17 Ar	Waco.
Schmidt, Archibald Gottfried	'17 M	Eagle Pass.
Graduate Eagle Pass High School.		
Schmidt, Frederick Harry	'14 C	Kingsbury.
Schmitz, Edward Joseph	'17 M	Dallas.
Schoremoyer, Conrad	1 a	Fort Worth.
Schornstein, Raphael Mondra	'16 Ar	Galveston.
Schramm, Albert Charles	'17 Ag	Taylor.
Schulze, Hugo Oscar	1 a	Hilda.
Schuwirth, William Charles	'14 E	San Antonio.
Scofield, John S	2 a	Gainesville.
Scott, Daniel Walton	'15 Ag	McKinney.
Scott, Floyd Logan	'14 M	Waco.
Scott, Henry Bruce	'17 E	Clareville.
Scott, John Pinckney, Jr	1 a	San Antonio.
Scott, Verne	'16 Ag	El Paso.
Scott, Walter Marion	'17 E	Marshall.
Seale, Herd Read	1 a	Walnut Springs.
Graduate Walnut Springs High School.		
Seale, Thomas Edwin	'17 Ag	Walnut Springs.
Graduate Walnut Springs High School.		
Seele, Hermann Hugo	'16 E	New Braunfels.
Graduate New Braunfels High School.		
Sengelmann, Gustav Hans Ferdinand	'15 Ag	Schulenburg.
Sevier, Gilbert Joseph	'17 Ag	Itasca.
Shannon, Louis Timothy	'17 E	Tilden.
Shelton, Jack	'17 Ag	Brownwood.
Sherley, Andrew Abram	'15 Ag	Anna.
Graduate Anna High School.		
Sherwood, Aris Brass, Jr	'17 E	San Angelo.
Short, James Clay	'16 C	Bandera.
Shutt, Ray Edward	1 a	Duncanville.
Simpson, John N	'14 Ag	Aledo.
Sims, Benjamin Victor	'17 Ag	Paint Rock.
Graduate Paint Rock High School.		
Sinclair, William Carl	'16 E	Wolfe City.
Singletary, Harry Hunter	'16 E	Atlanta.
Skeeler, Leon James	'15 Ch	Orange.
Graduate Orange High School.		
Skeeler, William John	'15 Ag	Orange.
Graduate Orange High School.		
Skeen, Arthur John	'16 Ag	Handley.
Skeen, Spence David	'15 Ag	Handley.
Slay, Clyde	'16 Ag	Italy.
Slay, Samuel Houston	'14 M	Frost.
Graduate Frost High School.		
Smilie, Joe Hanson	'15 Ag	Rosebud.
Smilie, William Henry	'16 Ag	Rosebud.
Smith, Anderson Cage	'17 M	Vernon.
Smith, Joseph Louis	2 a	McKinney.
Smith, Langston Montgomery	'16 Ag	Tyler.

Smith, Michael Gibson.................'17 E.......San Augustine.
Graduate San Augustine High School.
Smith, Marvin Wadsworth.............'15 E.......Overton.
Graduate Overton High School.
Smith, Philip Basil....................'17 Ag.....San Augustine.
Graduate San Augustine High School.
Smith, Ross...........................'17 E.......Waxahachie.
Smitham, Verner.....................'15 M.......Walnut Springs.
Smythe, Peter........................'17 E.......Etzatlan, Mexico.
Snider, James Bailey.................'14 Ag.....Walnut Springs.
Snyder, Lloyd Hurst...................'17 Ag.....Hereford.
South, Ira Walter.......................Sp Ar....Bryan.
Sparkman, Frank Alvin................'14 Ag.....Sterling City.
Graduate Sterling City High School.
Spencer, Oliver Forbes................'17 Ag.....Crosbyton.
Spencer, Thomas Carroll..............'14 C.......Athens.
Spiller, Kyle..........................'17 Ch.....Jacksboro.
Spruill, Alfred.........................1 a........Hillsboro.
Sramek, John Neil.....................'16 M.......Bryan.
Stacks, Emory Jefferson...............'16 Ag.....Palmer.
Stacks, Robert C......................'15 Ag.....Palmer.
Stallings, James Henry................'14 Ag.....Bryan.
Standifer, Lilburn Echols..............'17 Ag.....Spur.
Graduate Spur High School.
Stangel, Wenzel Louis.................'15 Ag.....Fort Worth.
Graduate North Fort Worth High School.
Steedman, John Roy...................'17 Ag.....Gordonville.
Stelzig, Elo Henry.....................'14 Ag.....Fayetteville.
Stephens, Uel.........................'16 C.......Lometa.
Graduate Lometa High School.
Stetler, Marvin Mayfield...............'17 Ar......Dallas.
Graduate Dallas High School.
Stewart, Gordon Frank.................1 a........Brady.
Stieber, Charles Hostrasser............'16 T.......Rock Springs.
Stiles, Robert Walker..................'15 Ar......San Antonio.
Stiles, William Lyford..................1 a........San Antonio.
Stockton, Haywood Paul, Jr...........'17 C.......Louise.
Graduate Louise High School.
Stoner, Charles Dewitt.................'16 E.......Lakeland, Florida.
Stribling, Simpson Ridley..............'15 E.......Waco.
Strieber, Jesse Edwin..................'17 E.......Yorktown.
Graduate Yorktown High School.
Stroman, Govan Napoleon............'17 Ag.....Uvalde.
Graduate Uvalde High School.
Stroud, Milton Lee.....................'14 Ag.....Kaufman.
Swafford, Chester Arthur..............'17 E.......Kaufman.
Graduate Kaufman High School.
Swink, Wilmer Turner..................'17 Ag.....Dawson.
Swope, John Gordon...................'17 E.......Houston.
Tabor, George Reed, Jr...............'17 Ag.....Puerto, V. C., Mexico.
Graduate Crystal City High School.
Taliaferro, Champ Lee, Jr............'17 T.......Henderson.
Tankersley, Clay Patten...............Sp Ag....Corpus Christi.
Tanner, Carl...........................'16 Ag.....Wolfe City.
Tanner, Edward Livingston............'14 Ag.....San Antonio.
Taylor, Delos Eugene..................'17 Ag.....Blum.
Graduate Blum High School.
Taylor, Oly Otis........................'16 E.......Corsicana.
Graduate State Orphan High School.
Taylor, Philip Bates....................Sp C......Santa Anita, Cal.
Taylor, William Darden.................Sp Ag....Homer, La.
Temple, Theodore Watkins.............'17 C.......Weatherford.
Templeton, Bruce Guthrie..............1 a........Dallas.
Terrell, Tully Vernon...................'17 Ag.....Decatur.
Graduate Decatur High School.

Thaxton, Robert Calvin................'16 Ag......Mason.
Graduate Mason High School.
Thomas, Charles Leonard..............'16 Ag......Marfa.
Graduate Marfa High School.
Thomas, Edwin Wayne...................'17 Ag......Marfa.
Graduate Marfa High School.
Thomas, Hugh Wesley...................'14 C.......Dallas.
Thomas, Mark Price....................'17 E.......Abilene.
Thomas, William Clinton..............'16 Ag......LaGrange.
Graduate LaGrange High School.
Thomason, James Hendon..............'16 Ag......Huntsville.
Thorne, Lawrence Edward.............'17 E.......Fort Worth.
Thorne, Lansing Stephen..............'17 E.......Fort Worth.
Thut, Charlie............................'17 Ag......Lefors.
Tigner, John Hughes..................'15 Ag......House.
Tilson, Howard Ferguson..............'17 C.......Texarkana.
Graduate Texarkana High School.
Timm, Henry Otto......................'17 E.......Hallettsville.
Graduate Hallettsville High School.
Tinker, Ernest Biggs...................'14 C.......Brandon.
Graduate Brandon High School.
Tippett, Cleveland.....................'17 Ag......Greenville.
Tomlinson, Mack Berry................ 2 a........Detroit.
Graduate Detroit High School.
Torti, Maurice Leo.....................'16 Ag......Tyler.
Graduate Tyler High School.
Tracy, William Cloyde.................'17 Ag......Victoria.
Graduate Victoria High School.
Trew, Robert Lafayette................ Sp Ag....Myra.
Trickey, Charlie Thomas...............'17 C.......Sanger.
Graduate Sanger High School.
Trueheart, John Crawford..............'16 Ag......San Antonio.
Tucker, Coleman Calvert...............'17 Ag......Missouri City.
Tuerpe, Elmer Christopher............ 1 t........Lytle.
Tuerpe, Ellis Richard.................. 1 t........Lytle.
Tumlinson, Otto Gurvas............... 1 a........Verdi.
Turnage, Rodger Elmo.................'16 E.......LaGrange.
Graduate LaGrange High School.
Turner, Joseph Marston, Jr............'15 Ag......Angleton.
Uhr, Irwin Adolph.......................'17 E.......San Antonio.
Underwood, John Carson, Jr...........'17 Ag......Houston.
Graduate Houston High School.
Vance, John Bernard................... 2 a........Devine.
Vance, John William...................'16 Ag......Gouldbusk.
Van Deren, Earl Roff...................'16 Ag......Van Alstyne.
Graduate Van Alstyne High School.
Van Hutton, Edgar......................'17 AE......LaGrange.
Vickers, Major R. L.....................'17 Ag......Tehuacana.
Vossler, James Mears..................'14 E.......Houston.
Waak, Walter............................ 1 a........Bellville.
Graduate Bellville High School.
Wadley, Burr Plevin....................'17 Ag......Ferris.
Wagnon, Daniel Peter..................'16 Ar.......Mathis.
Walker, Albert Alvia....................'17 E.......Rockwall.
Walker, John Thaddeus.................'17 C.......Azle.
Walker, Randolph........................'17 Ar......Timpson.
Graduate Timpson High School.
Wallace, James Asberry................'15 E.......Blooming Grove.
Wallis, Samuel Jackson................ Sp Ag....Cuero.
Walton, Robert Frank..................'17 M.......Hubbard.
Ware, Henry Grady...................... Sp Ag....Kemp.
Warren, Cleon Barnes..................'14 Ag......Hewitt.
Warren, Charles Frederick.............'15 Ag......Hewitt.
Graduate Hewitt High School.

Washam, Oscar Floyd *Graduate Hico High School.*	'15 Ag	Crawford.
Watson, John Leroy	'15 Ag	Stephenville.
Wear, Hugh Andrew	'14 Ar	Rogers.
Weatherford, Archie Fountain	'17 Ag	Driftwood.
Weaver, Alfred Bradley	'17 E	Rule.
Weiler, Lewis Forest	'17 M	Corsicana.
Wellage, George Francis	'16 Ag	Eagle Pass.
Wendlandt, Charles Fred Julius	1 a	Austin.
Werner, Arthur Henry	1 a	Mt. Pleasant.
Werner, Arthur Max	1 t	Dallas.
Whatley, Alva White	1 a	Calvert.
White, Jesse Egbert *Graduate Gainesville High School.*	'16 E	Gainesville.
White, Kenneth Reignald	'17 Ag	Somerville.
Whitehead, Raymond William	'17 Ar	Fort Worth.
Whitener, Harry William	'16 M	Burton.
Whittet, Chester Stiggins	'15 Ch	Anchorage.
Whitton, Robert Benjamin *Graduate Timpson High School.*	'17 Ag	Timpson.
Wight, Schuyler Byron	'16 M	Odessa.
Wilhite, Ray Maynard *Graduate Lometa High School.*	'17 M	Lometa.
Wilkinson, Edgar *Graduate Menard High School.*	'17 C	Menard.
Wilkinson, Henry Hayden *Graduate Bullard High School.*	'17 Ag	Bullard.
Wilkinson, Rufus Lester	'17 E	Hereford.
Williams, Clayton Wheat	'15 E	Fort Stockton.
Williams, James Wishart *Graduate Hamilton High School.*	'17 C	Hamilton.
Williams, Richard Stokely	'16 T	Thorpe.
Williams, Stump Marvin	'16 Ag	Corsicana.
Williamson, Alma Boston	'17 Ag	Alief.
Williamson, Philip Gathings	'16 E	Covington.
Willman, George Conan	'16 T	Bryan.
Wilson, Charles Sebastian	'15 M	Bryan.
Wilson, Frank William *Graduate Port Lavaca High School.*	'17 Ag	Port Lavaca.
Wilton, Edgar Fremaux	'17 Ag	Houston.
Winston, Milton Montgomery	'17 Ag	San Marcos.
Winston, Walter Clinton *Graduate Bay City High School.*	'17 E	Bay City.
Wipprecht, Read	'17 Ag	Bryan.
Wisrodt, Clarence Emil Philip	'15 Ag	Galveston.
Witcher, Loftin Verdery *Graduate Fort Worth High School.*	'16 Ag	Fort Worth.
Woody, George Abe	'17 E	Tilden.
Wooten, Ralph Hudson	'16 Ag	Senatobia, Miss.
Wotipka, Walter Martin *Graduate Flatonia High School.*	'17 Ag	Flatonia.
Wynn, Charles Clinton	2 a	Bryan.
Yater, Alexander Norwood *Graduate Cleburne High School.*	'17 Ag	Cleburne.
Yeary, David Edward	1 a	Farmersville.
Yeary, Horace Edwin *Graduate Farmersville High School.*	'15 Ag	Farmersville.
Yeary, James Carroll *Graduate Farmersville High School.*	'15 Ag	Farmersville.
Yeates, Clarence Carpenter	'17 E	Katy.
Young, Roy Lester *Graduate Hallettsville High School.*	'15 E	Hallettsville.
Young, Spencer	1 a	Killeen.
Youngblood, Elzy Otis *Graduate Vernon High School.*	'17 E	Vernon.

Zedler, Otto Frederick Christian	'16 E	Ottine.
Zengle, O. B	'17 E	San Antonio.
Zuber, Neill Daniel	'15 Ag	Bryan.
Zuehl, Albert *Graduate Yoakum High School.*	'17 M	Lavernia.

SUMMER SCHOOL OF COTTON CLASSING, 1913.

Allyn, H. W	Philadelphia, Pa.
Baber, J. L	Winnsboro.
Bailey, A. C	College Station.
Braly, T	Celeste.
Brown, J. J	Lockhart.
Brown, W. L	Gordon.
Burch, J. B	Gainesville.
Chaney, C. N	Mesa.
Cochran, W. A	Linden.
Dennis, V. A	Caldwell.
Dudley, J. W	Ferris.
Ferguson, W. L	Vernon.
Furrh, J. D	Elysian Fields.
Gardner, J. E	Big Foot.
Gillam, O. R	Mart.
Grinnan, L. P	Terrell.
Hall, A. N	Hillsboro.
Heck, J	Groesbeck.
Hill, F	Whitt.
Hinton, J. W	Gainesville.
Hinton, W. B	Gainesville.
Jones, A. G	Brady.
Kellogg, A. T	Francitas.
Lam, G. S	Mound.
Lang, H. B	Somerville.
Leigh, J. W	Navasota.
Lemon, J. J	Nocona.
McDuff, S. E	Grandview.
McFarland, J. A	Ladonia.
McIver, J. D	Lexington.
Mair, R	San Antonio.
Mathews, J. L	San Augustine.
Mays, V. B	New Salem.
Milner, R. T., Jr	College Station.
Mulkey, F. G	Buffalo.
Newton, P	Bryan.
Parker, O. M	Jewitt.
Potts, E. A	Caldwell.
Rhodes, H. F	Beaver Falls, Pa.
Rife, T. D	Del Rio.
Rogers, T. L	Palestine.
Rutledge, W. J	Dallas, Texas.
Sagareff, W	Tchernigoff, Russia.
Sansom, G. W	Groesbeck.
Sharp, E. F	San Augustine.
Stevens, D. T	College Station.
Thompson, W. E	Milford.
Traugott, C	San Antonio.
Watson, J. Y	Groveton.
Wright, E. F	Mexia.
Young, A. L	Muskogee, Okla.

SHORT SUMMER COURSE FOR FARMERS, 1913.

Ables, L. R	Rosebud.
Acker, H. W	Whitehouse.

Allyn, H. W	Philadelphia, Pa.
Arnold, P	Rockdale.
Bagwell, J. F	———
Baker, N. C	Lexington.
Barton, J. A	Port Lavaca.
Banzhaf, G	Rockdale.
Baur, V. H	Floresville.
Beavers, J. J	Gause.
Berryman, J. O	Corpus Christi.
Bertelson, P	Kingsville.
Burns, C. R	Venus.
Butler, G. W	Mexia.
Chisholm, W. H	Sherman.
Collier, C. M	Goliad.
Colvin, J. F	Tama.
Cooper, H. H	Nacogdoches.
Daugherty, T. P	Van Ormy.
Dickson, W. E	Oplin.
Dowling, W	Bryan.
Eisentraut, J. C	Beaumont.
Elwell, L. S	Oakville.
Gaines, M. C	Volney.
Gatewood, G	Cleburne.
Gillam, O. R	Mart.
Gilliam, B. L	Temple.
Gilliam, R. A	Dallas.
Gilley, T. V	Whitehouse.
Gorham, R. A	Waco.
Gray, J. D	Boerne.
Green, J. M	Lincoln.
Greer, J. D	Nacogdoches.
Gruss, E. W	Galveston.
Honenkamp, M., Jr	Fort Worth.
Hilton, F. E	Waxahachie.
Hunt, E	Mexia.
Johns, A	———
Knudson, T	Meridian.
Latch, J. S	Donna.
Lown, F. D	Thornton.
McCarthy, S. M	Weatherford.
McKellar, D. P	Palestine.
McMillan, E. L	Lometa.
May, D. R	Berclair.
Meadows, A. B	Oenaville.
Meadows, B. F	Oenaville.
Meadows, W. L	Oenaville.
Messer, W. F	Whitehouse.
Minus, W. S	Asherton.
Murphy, H. M	Hermleigh.
Nollkamper, E. G	Shiner.
Orr, C. K	Red Oak.
Orms, G. W	Leola.
Osborne, S. S	Raymondville.
Payne, M. T	Temple.
Payton, B. R	Austin.
Peck, T. H	Star.
Persons, R. W	Bay City.
Peters, L	San Antonio.
Pietzschke, E. C	Robstown.
Poenisch, E	Corpus Christi.
Pomeroy, E	Donna.
Quicksall, J. F	Cleburne.
Ray, J. J	Bryan.
Renfro, O. C	Corpus Christi.
Rhodes, H. F	Beaver Falls, Pa.

Rhodes, M. B	Vernon.
Robinson, H. S	Houston.
Russell, C. E	Yoakum.
Savage, E	Axtell.
Sagareff, W	Tchernigoff, Russia.
Schallert, A	Alice.
Schallert, R	Alice.
Schattenberg, Mrs. A. C	————
Schroeder, A. H	Rockdale.
Schroder, E. H	Rockdale.
Sharp, E. F	San Augustine.
Shelton, J	Brownwood.
Shepperd, B. E	Donna.
Shuddemagen, E. G	Sabinal.
Simpson, B. F	Northfield.
Smith, J	Nacogdoches.
Smith, S. J	————
Speer, S. A	————
Tallman, C. E	Bandera.
Taylor, C. F	Danbury.
Tidwell, J. R	Franklin.
Vandiver, M. H	Mineola.
Walton, T. O	Livingston.
Weber, F., Jr	Corpus Chrsiti.
Westbrook, W. S	————
White, H	Keller.
White, R	Keller.
Whitten, R. L	Oenaville.
Wilkinson, L	Katy.
Wilkinson, L. C	Brenham.
Wilson, J. R	Hermleigh.
Wilson, L. M	Houston.
Winston, A. D	Whitehouse.
Winston, T. G	Whitehouse.
Wiseman, A. G	Flatonia.
Wood, E. E	Bay City.
Woodward, R. C	San Antonio.
Wright, E. T	Ricardo.
Wright, J. B	Oplin.
York, O. C	Lincoln.

SHORT WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY SURVEYORS, 1914.

Morgan, Frank P	Belton.
Tschirhart, S	Castroville.

SUMMARY OF ATTENDANCE, 1913–14.

REGULAR SESSION.

	Agr.	Arch.	A. E.	Ch. E.	C. E.	E.E.	M.E.	T.E.	Total
Graduates	5	..	..	..	2	..	2	..	9
Seniors	35	2	1	..	10	14	10	..	72
Juniors	67	6	..	6	16	24	12	4	136
Sophomores	96	6	5	5	27	33	17	5	194
Freshmen	148	17	11	2	39	81	34	6	338
Specials	19	2	1	..	1	..	..	..	23
Two-Year Courses— First Year	77	..	..	..	..	..	..	6	83
Two-Year Courses— Second Year	27	..	..	..	..	..	..	6	33
Total	474	33	18	13	95	153	75	27	888

Enrollment, Regular Session	888
Summer School of Cotton Classing, 1913	51
Short Summer Course for Farmers, 1913	107
Short Winter Course for Road Supervisors and County Surveyors	2
	1048
Deduct names counted twice	8
Total Enrollment, 1913–14	1040

REGIMENTAL ORGANIZATION 1913–1914.

The Corps of Cadets is organized as a Regiment of Infantry of three Battalions with a Regimental Band and a Bugle Corps.

First Lieutenant Levi G. Brown, Cavalry, United States Army,
Commandant of Cadets.

Quartermaster Sergeant J. M. Kenny, United States Army, Retired,
Assistant Commandant.

First Sergeant George Smart, United States Army, Retired,
First Sergeant Philip Henderson, United States Army, Retired,
Assistant Commandants.

B. P. Day, Chief Musician.

LINEAL RANK OF OFFICERS AND NON-COMMISSIONED OFFICERS OF THE CADET REGIMENT.

Colonel.

1. Parr, V. V.

Lieutenant Colonel.

1. Reed, W. N.

Majors.

1. Lenert, A. A.
2. Miller, A. C.
3. Tanner, E. L.

Captains.

1. Kotzebue, M. H.
2. Knox, G. P.
3. Scott, F. L.
4. Tinker, E. B.
5. James, O. J.
6. Beasley, W. G.
7. Jordan, G. F.
8. Powell, L. H.
9. Schmidt, F. H.
10. Mayers, H. P.
11. Gibbens, E.
12. Vossler, J. M.
13. Stelzig, E. H.
14. Snider, J. B.
15. Broome, W. S.
16. Ball, B. C.
17. Slay, S. H.

First Lieutenants.

1. Hoepfner, F. W.
2. McGinnis, P. T.
3. Ayers, E. L.
4. Biggers, C. A.
5. McDowell, J. C.
6. Groginski, P.
7. Jones, W. T.
8. Braunig, H. E.
9. Warren, C. B.
10. Sparkman, F. A.
11. Bradley, E. I.
12. Camp, G. D.
13. Davis, T. C.
14. Wear, H. A.
15. Pickens, D. B.
16. Clement, C. B.

Second Lieutenants.

1. Irby, A. H.
2. Peterson, J. A.
3. Jennings, A. L.
4. Farthing, W. E.
5. Herrington, J. J.
6. Lane, G. I.
7. Rollins, M. E.
8. Harrison, J. C.
9. Stroud, M. L.
10. Baker, H. K.
11. Rich, L. G.
12. Melton, W. B.
13. Levy, D. H.
14. Phillips, F. Roy.
15. Fisher, J. K. G.

Regimental Sergeant Major.

1. Kinnard, A. W.

Regimental Quartermaster Sergeant.

1. Peters, E. M.

Regimental Commissary Sergeant.

1. Adriance, G. W.

Regimental Color Sergeant.

1. Wisrodt, C. E. P.

Chief Trumpeter.

1. Sherley, A. A.

Battalion Sergeants Major.

1. Ellis, H. F.
2. Francisco, E. O.
3. Crisp, M. C.

Drum Major.

1. Brundrett, H. M.

First Sergeants.

1. Hogue, E. N.
2. Allen, R. R.
3. Bugbee, J. S.
4. Brown, L. W.
5. Dickie, B. H.
6. Wilson, C. S.
7. Clark, S. F.
8. Dunning, G. R.
9. Mowery, I. H.
10. Sengelmann, G. H.
11. Warren, C. F.
12. Green, O. W.
13. Davis, C. J.

Sergeants.

1. Palmer, G. C.
2. Cawthon, F. W.
3. Mason, S. K.
4. Moss, M. A.
5. Moore, J. H.
6. Williams, C. W.
7. Campbell, A. R.
8. Smith, M. W.
9. Mitchell, G. W.
10. Skeeler, L. J.
11. Gammill, H. H.
12. Hudspeth, C. C.
13. Coleman, W. C.
14. Browder, J. H.
15. Montague, F. O.
16. Clarkson, P. W.
17. Young, R. L.
18. Reynolds, W. L.
19. Mayo, H. M.
20. Hill, M. E.
21. McCollum, H. T.
22. Bell, J. E.
23. Gillespie, W. S.
24. Francis, W. B.
25. Eiland, E. R.
26. Yeary, H. E.
27. Scott, D. W.
28. Sansom, G. W.
29. Collins, J. C.
30. Saper, G. A.
31. Haden, J. F.
32. Yeary, J. C.
33. Overstreet, A. M.
34. Girardeau, E. R.
35. Crown, P. T.
36. Sanders, J. L.
37. Smilie, J. H.
38. Jennings, E. P.
39. Faber, B. H.
40. Knolle, M.
    (Trophy Sergeant.)
41. Smitham, V.
42. Denton, V. C.
43. Burges, A. E.
44. Rutan, W. L.
45. Menke, E. P.
46. Sanders, M. D.
47. Martin, W. P.
48. Washam, O. F.
49. Davis, D.
50. Rack, E. C.
51. Homann, F. A.
52. McCarty, S. C.
53. Everett, G. D.
54. Barraco, V. A.
55. Jarvis, J. R.
56. Nash, J. F.
57. Cherry, T. G.

58. Wallace, J. A.
59. Moursund, L. E
60. Carson, W. W.
61. Stribling, S. R.

Corporals.

1. Easley, C. M.
2. Bruce, A. D.
3. Moffett, G. C.
4. Dickie, A.
5. Gray, O. S.
6. Mogford, J. S.
7. Erskine, W. S.
8. Olson, P. H.
9. Coleman, J. E.
10. Collins, W. A.
11. Keasler, T. F.
12. Dennis, L. C.
13. Curnutte, J. V.
14. Short, J. C.
15. Foster, J. L.
16. Cornett, G. J.
17. Fuess, C. A.
18. Beringer, M. S.
19. Nisbet, W. R.
20. Bull, A. C.
21. Garitty, J. P.
22. Johnson, A. D.
23. Coleman, F. R.
24. Moses, A.
25. Stephens, U.
26. Gallman, D. M.
27. Crawford, V. W.
28. Seele, H. H.
29. Peutet, J. P.
30. Ballard, J. C.
31. Wooten, R. H.
32. Haynes, S. B.
33. Jopling, H. A.
34. Vance, J. W.
35. Davis, G. E.
36. Killough, H. B.
37. Hall, R. A.
38. White, J. E.
39. Miller, H. E.
40. Metcalfe, P. B.
41. Cover, J. S.
42. Buchner, L. M.
43. Hagaman, L. H.
44. Rust, C. E.
45. Barnett, C. H.
46. Connor, J. A.
47. Skeen, A. J.
48. Porter, T. S.
49. Williams, S. M.
50. Morris, T. K.
51. Pedigo, M. S.
52. Braumiller, W. E.
53. Burkett, F.
54. Crocker, W. J.
55. Henley, E. N.
56. Hefner, C. B.
57. McGregor, J. I.
58. Runge, H. E.
59. Blalock, L. B.
60. Hanson, W. K.
61. Stoner, C. D.
62. Casey, A. C.
63. Baccus, E. D.
64. McGown, G. C.
65. Kelly, D. C.
66. Cole, R. J.
67. Murphy, W. M.
68. Sawyer, H. A.
69. Hausser, C.
70. Hawkins, A. R.
71. Abernathy, M. A.
72. Hollingshead, F. V.
73. Kristek, G. H.
74. Oglesby, E. O.
75. Riesner, E. L.
76. Bramlette, F. L.
77. Hockaday, I. T.
78. Zedler, O. F.
79. Helm, D. L.

ASSIGNMENTS TO ORGANIZATIONS.

Colonel—Parr, V. V.
Lieutenant Colonel—Reed, W. N.
Captain and Adjutant—Kotzebue, M. H.
Captain and Quartermaster—Schmidt, F. H.
Captain and Ordnance Officer—Gibbens, E.
Captain and Commissary—Powell, L. H.
Regimental Sergeant Major—Kinnard, A. W.
Regimental Quartermaster Sergeant—Peters, E. M.
Regimental Commissary Sergeant—Adriance, G. W.
Regimental Color Sergeant—Wisrodt, C. E. P.

The Band.

Captain.
Slay, S. H.

First Lieutenant.

Clement, C. B.

Drum Major.

Brundrett, H. M.

First Sergeant.

Greene, O. W.

Sergeants.
Faber, B. H.
Carson, W. W.
Stribling, S. R.

Corporals.

Williams, S. M.
Morris, T. K.
Pedigo, M. S.

Bugle Corps.

Chief Trumpeter.

Sherley, A. A.

Corporals.

Garitty, J. P.
Skeen, A. J.
Hanson, W. K.

First Battalion.

Major—Miller, A. C.
First Lieutenant and Adjutant—Hoepfner, F. W.
Second Lieutenant and Quartermaster—Peterson, J. A.
Sergeant Major—Crisp, M. C.

Company A.	Company B.	Company C.	Company D.
Captain. Beasley, W. G.	Captain. Broome, W. S.	Captain. Ball, B. C.	Captain. Jordan, G. F.
First Lieutenant. Ayers, E. L.	First Lieutenant. Sparkman, F. A.	First Lieutenant. Davis, T. C.	First Lieutenant. Pickens, D. B.
Second Lieutenant. Herrington, J. J.	Second Lieutenant. Fisher, J. K. G.	Second Lieutenant. Lane, G. I.	Second Lieutenant. Melton, W. B.
First Sergeant. Clark, S. F.	First Sergeant. Warren, C. F.	First Sergeant. Dunning, G. R.	First Sergeant. Dickie, B. H.

Sergeants. Skeeler, L. J. Sansom, G. W. Jennings, E. P. McCarty, S. C.	Sergeants. Palmer, G. C. Gammill, H. H. Smilie, J. H. Nash, J. F.	Sergeants. Hudspeth, C. C. McCollum, H. T. Collins, J. C. Knolle, M. (Trophy Sergeant.) Rutan, W. L. Barraco, V. A.	Sergeants. Cawthon, F. W. Coleman, W. C. Bell, J. E. Sanders, J. L. Homann, F. A.
Corporals. Bruce, A. D. Keasler, T. F. Bull, A. C. Wooten, R. H. Cover, J. S. Braumiller, W. E. Bramlette, F. L.	Corporals. Johnson, A. D. Haynes, S. B. Buchner, L. M. McGown, G. C. Riesner, E. L. Hockaday, I. T. Zedler, O. F.	Corporals. Moffett, G. C. Dennis, L. C. Coleman, F. R. Metcalfe, P. B. MeGregor, J. I.	Corporals. Dickie, A. Curnutte, J. V. Moses, A. Seele, H. H. Baccus, E. D. Sawyer, H. A.

Second Battalion.

Major—Lenert, A. A.
First Lieutenant and Adjutant—McGinnis, P. T.
Second Lieutenant and Quartermaster—Irby, A. H.
Sergeant Major—Ellis, H. F.

Company E.	**Company F.**	**Company G.**	**Company H.**
Captain. Snider, J. B.	Captain. Mayers, H. P.	Captain. James, O. J.	Captain. Stelzig, E. H.
First Lieutenant. Bradley, E. I.	First Lieutenant. Braunig, H. E.	First Lieutenant. Camp, G. D.	First Lieutenant. Biggers, C. A.
Second Lieutenant. Jennings, A. L.	Second Lieutenant. Phillips, F. Roy	Second Lieutenant. Stroud, M. L.	Second Lieutenant. Farthing, W. E.
First Sergeant. Bugbee, J. S.	First Sergeant. Mowery, I. H.	First Sergeant. Brown, L. W.	First Sergeant. Sengelmann, G. H.
Sergeants. Mason, S. K. Browder, J. H. Eiland, E. R. Smitham, V. Moursund, L. E.	Sergeants. Moss, M. A. Montague, F. O. Gillespie, W. S. Saper, G. A. Davis, D.	Sergeants. Clarkson, P. W. Francis, W. B. Haden, J. F. Crown, P. T.	Sergeants. Campbell, A. R. Reynolds, W. L. Overstreet, A. M. Rack, E. C. Burges, A. E.
Corporals. Gray, O. S. Short, J. C. Hagaman, L. H. Blalock, L. B. Henley, E. N. Hefner, C. B.	Corporals. Mogford, J. S. Foster, J. L. Stephens, U. Vance, J. W. Hausser, C. Helm, D. L.	Corporals. Erskine, W. S. Cornett, G. J. Gallman, D. M. Davis, G. E. Rust, C. E. Runge, H. E.	Corporals. Coleman, J. E. Peutet, J. P. White, J. E. Casey, A. C. Hollingshead, F. A, Kristek, G. H.

Third Battalion.

Major—Tanner, E. L.
First Lieutenant and Adjutant—Wear, H. A.
Second Lieutenant and Quartermaster—Harrison, J. C.
Sergeant Major—Francisco, E. O.

Company I.	**Company K.**	**Company L.**	**Company M.**
Captain. Scott, F. L.	Captain. Tinker, E. B.	Captain. Vossler, J. M.	Captain. Knox, G. P.
First Lieutenant. Warren, C. B.	First Lieutenant. Groginski, P.	First Lieutenant. Jones, W.T.	First Lieutenant. McDowell; J. C.
Second Lieutenant. Rich, L. G.	Second Lieutenant. Baker, H. K.	Second Lieutenant. Levy, D. H.	Second Lieutenant. Rollins, M. E.
First Sergeant. Hogue, E. N.	First Sergeant. Allen, R. R.	First Sergeant. Wilson, C. S.	First Sergeant. Davis, C. J.
Sergeants. Moore, J. H. Young, R. L. Sanders, M. D. Martin, W. P. Everett, G. D.	Sergeants. Williams, C. W. Smith, M. W. Mayo, H. M. Scott, D. W. Denton, V. C.	Sergeants. Yeary, H. E. Yeary, J. C. Girardeau, E. R. Washam, O. F. Wallace, J. A.	Sergeants. Mitchell, G. W. Hill, M. E. Menke, E. P. Jarvis, J. R. Cherry ,T. G.

Corporals.
Fuess, C. A.
Crawford, V. W.
Killough, H. B.
Kelly, D. C.
Murphy, W. M.
Oglesby, E. O.

Corporals.
Easley, C. M.
Ballard, J. C.
Miller, H. E.
Connor, J. A.
Burkett, F.
Stoner, C. D.

Corporals.
Olson, P. H.
Beringer, M. S.
Hall, R. A.
Barnett, C. H.
Cole, R. J.
Hawkins, A. R.

Corporals.
Collins, W. A.
Nesbit, W. R.
Jopling, H. A.
Porter, T. S.
Crocker, W. J.
Abernathy, M. A.

THE HOWELL TROPHY.

The Howell Trophy is a handsome Texas Flag, presented to the College in 1903 by Mr. W. S. Howell, of Bryan, Texas. A competitive drill is held each session during Commencement to determine the best drilled company. The successful company is designated as the "Trophy Company" and carries the Trophy during the following session. It is authorized to elect a "Trophy Sergeant" who is the Color Bearer.

The Trophy Company for the session of 1913-14 is Company "C."

DEGREES AND HONORS CONFERRED AT THE THIRTY-SEVENTH ANNUAL COMMENCEMENT

(June 10, 1913.)

MASTER OF SCIENCE IN AGRICULTURE.

Moore J. M.
B. S., Alabama Polytechnic Institute, 1912.

CHEMICAL ENGINEER.

Bechert F. J.
B. S., A. & M. College of Texas, 1911; M. E., 1912.

Bryant W. T.
B. S., A. & M. College of Texas, 1911.

McMillan L. B.
B. S., A. & M. College of Texas 1911; M. E., 1912.

CIVIL ENGINEER.

Windrow R. J.
B. S., A. & M. College of Texas, 1906.

ELECTRICAL ENGINEER.

Lehmann E. W.
L. S., A. & M. College of Mississippi, 1910.

Proctor J. H.
B. S., A. & M. College of Texas, 1910.

von Rosenberg H. C.
B. S., A. & M. College of Texas, 1913.

MECHANICAL ENGINEER.

Forsyth J. M.
B. S., A. & M. College of Texas, 1912.

Neff A. J.
B. S., A. & M. College of Texas, 1903.

BACHELOR OF SCIENCE.

Dr. Marion McMillan, New York City.

In Agriculture.

Bower, L. J.
Caldwell, R. E.
Cardwell, W. W.
Chewning, J. W.
Connellee, E. T.
Cowart, I. E.
Cox, R. W.
Culbertson, J. L.
Dowell, H. B.
Eagleston, E. G.
Egan, J. T.
Ehlinger, R. B.
Eversberg, E. A.
Hall, G. G.
Harrison, E. W., Jr.
Heller, J. H.
(As of 1912.)
Jackson, J. W.
James, M. H., Jr.
Joplin, J. F.
Kelly, C. P.
Kennedy, B. R.
(As of 1912.)
Laake, E. W.
Lane, G. J.
Langdon, Y. M.
Lochridge, C. F.
Lodal, M. G.
Lown, F. D.
Miller, R. S.
Miller, W. Z.
O'Conor, D.
Ohlendorf, W.
Oliver, C.
Roberts, C. A.
Scofield, J. A.
Stevens, D. T.
Stone, J. M.
Taylor, A. B.
Thomson, J. M.
Tolbert, W. S.
Wallis, T. T.
Weinert, H. G. H.
White, T. F.
(As of 1912.)
Whitfield, C. A.
Young, M. H.

In Architectural Engineering.

Burton, A.
Fountain, E. J., Jr.
Josserand, L. P.
Langford, E.
Orth, W. A.

In Chemical Engineering.

Christian, J. R.
Holland, C. J.
Hudgins, L. A.

In Civil Engineering.

Alexander, M. R.
Anderson, J. V.
Baylor, R. E.
Beazley, C. N.
Birk, R. A.
Borchert, W. C.
Bourland, W. F.
Cade, K. C.
Cain, R. W.
Chinski, C. C.
Davis, J. N.
Donoho, W. T.
Fitzpatrick, B.
French, W. A., Jr.
Gillette, P. C.
Gist, W. B.
Gonzales, J. M.
Grissom, R. J.
Hill, J. R.
Jones, H. P.
Lienhard, L. V.
Lyles, J. V.
Montgomery, F. L.
Oliphant, L. N.
Olson, J. N.
Roberts, F. A.
Rollins, J. G.
Sayers, A. F.
Schroeter, R. R.
Spence, T. R.
Waters, J. J., Jr.
Whiteside, B.

In Electrical Engineering.

Apperson, R. S.
Bowler, S. E.
Brown, J. F.
Burleson, W. H.
Campbell, P.
Chambers, T. L.
Hefner, W. J.
Keller, J.
Koinm, C. H.
Kraege, A. C. A.
Lammers, E. S., Jr.
McDonald, J. M.
Miller, R. H.
Nolte, R. W.
von Rosenberg, H. C.
(As of 1912.)
Simon, R. B.
Tucker, D. H.
Walker, P. W.

In Mechanical Engineering.

Anderson, R. O.
Johnston, L. M.
Lidiak, J. P.
Lorenz, J. H.
Nussbaum, J. H.
Torrence, W. C.
Walzem, L. F.

In Textile Engineering.

Collins, J. W. H.
Dreiss, E., Jr.
Nugent, C. W.
(As of 1912.)
Tigner, J. B.

SUMMARY OF DEGREES CONFERRED.

Advanced Degrees:		
M. S.	1	
Ch. E.	3	
C. E.	1	
E. E.	3	
M. E.	2	
		10
Baccalaureate Degrees:		
B. S. (In Agriculture)	44	
B. S. (In Architectural Engineering)	5	
B. S. (In Chemical Engineering)	3	
B. S. (In Civil Engineering)	32	
B. S. (In Electrical Engineering)	18	
B. S. (In Mechanical Engineering)	7	
B. S. (In Textile Engineering)	4	
B. S. (No Course Specified)	1	
		114
Total		124

CERTIFICATES IN TWO-YEAR COURSES.

In Agriculture.

Hinckley, L. C.
Hinton, W. B.
McWilliams, G. L.
Mays, V. B.
Setzer, W. K.
Weatherford, J. P.
Weir, H. H.

In Textile Engineering.

Crockett, C.

DISTINGUISHED STUDENTS.

At the end of each session students who have during the year received no term grade below "B" and who have no deficiency in "Practice," are announced as "Distinguished."

SENIOR CLASS.

Anderson, J. V.
Brown, J. F.
Collins, J. W. H.
Cowart, I. E.
Harrison, E. W.
Joplin, J. F.
Laake, E. W.
Lammers, E. S.
Langdon, Y. M.
Ohlendorf, W.
Rollins, J. G.
Spence, T. R.
Waters, J. J.
Young, M. H.

JUNIOR CLASS.

Bradley, E. I.
Lenert, A. A.
Scott, F. L.

SOPHOMORE CLASS.

Adriance, G. W.
Bugbee, J. S.
Densmore, R. A.

FRESHMAN CLASS.

Dennis, L. C.
Dickie, A.
Gray, O. S.
Jopling, H. A.
Moffett, G. C.
Olson, P. H.
Short, J. C.

TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.	SECOND YEAR.
Pierson, J. C.	Hinckley, L. C.

TITLES OF THESES OF GRADUATING CLASS, JUNE, 1913.

Candidate for the Degree of Master of Science.

Moore, James Mumroe, B. S. . . . . .Fayette, Ala.
A Study of Systems of Farm Management on Some Typical Live Stock Farms in Texas.

Candidates for the Degree of Chemical Engineer.

Bechert, Fred John, B. S., M. E. . . . . .Corpus Christi.
The Analysis of Mixed and Impure Sugar Products.
Bryant, William Thoreau, B. S . . . . .Hillsboro.
The Determination of the Suitability of Crude Petroleum and Petroleum Products for Use in Smudge Pots.
McMillan, Luther Burchard, B. S., M. E . . . . .Anchor.
A Study of Boiler Waters.

Candidate for the Degree of Civil Engineer.

Windrow, Rollen Joseph, B. S . . . . .Waco.
Highway Culverts and Bridges.

Candidates for the Degree of Electrical Engineer.

Lehmann, Emil Wilhelm, B. S. . . . . .College Station.
A Treatise on the Use of Electricity on the Farm.
Proctor, Joseph Harold, B. S . . . . .Houston.
Theoretical Design of Commercial Transformers.
von Rosenberg, Hilmer Carl, B. S. . . . . .Hallettsville.
An Oscillographic Study of Transformer Grouping.

Candidates for the Degree of Mechanical Engineer.

Forsyth, James Milen, B. S . . . . .McKinney.
With Neff, Asa Judson. . . . . .Dallas.
Efficiency Test of a Battery of Water-Tube Boilers.

CANDIDATES FOR THE DEGREE OF BACHELOR OF SCIENCE.

In Agriculture.

Bower, Luther Jasper..................................Stephenville.
The Life History, Habits, and Control of the House Fly on the A. & M. College Campus.

Caldwell, Robert Ezekiel..................................Bryan.
A Test of the Relative Values of Sorghum Hay and Cotton Seed Hulls for Fattening Steers. (With C. P. Kelly.)

Cardwell, Walter Wilcox..................................Lockhart.
The Influence of Heredity on Prolificacy in Poland-China Hogs. (With A. S. Thomson.)

Chewning, James Walter..................................Goodlett.
Comparative Fertilizer Tests with Cabbage. (With I. E. Cowart.)

Connellee, Earn Tindall..................................Eastland.
Draft Tests Under Field Conditions of Some Common Farm Implements.

Cowart, Ira Ellis..................................San Antonio.
Comparative Fertilizer Tests with Cabbage. (With J. W. Chewning.)

Cox, Romeo Willis..................................Childress.
Serum-Simultaneous Treatment for Immunizing Hogs to Cholera.

Culbertson, Joe L..................................Waxahachie.
Economical Production of Butter Fat Based on Tests at State Fair, Dallas, Texas, 1912. (With R. S. Miller.)

Dowell, Horace Bartlett..................................McKinney.
The Use of Abortion Vaccine for the Prevention and Treatment of Contagious Abortion of Cows. (With R. B. Ehlinger.)

Eagleston, Edward Granville..................................Smithville.
Treatment for Echinorhynchus Gigas. (With W. S. Tolbert.)

Egan, John Thomas..................................Denton.
Economical Production of Butter Fat Based on Test at State Fair, 1911.

Ehlinger, Rancier Burt..................................College Station.
The Use of Abortion Vaccine for the Prevention and Treatment of Contagious Abortion of Cows. (With H. B. Dowell.)

Eversberg, Eugene August..................................Brenham.
Some Secondary Effects of Fertilizers on Soils. (With H. G. Weinert.)

Hall, George Graham..................................Houston.
Treatise on Tree Surgery. (With D. T. Stevens.)

Harrison, Erwin William..................................Greenville.
The Influence of Heredity on Prolificacy in Duroc-Jersey Hogs. (With C. A. Roberts.)

Heller, Joe Henry..................................Buda.
Value of Balanced Rations for Farm Animals.

Jackson, Jesse Wilburn..................................Kosse.
A Chemical, Physical, and Pot Culture Study of Two Typical Soils of Limestone County, Texas. (With C. F. Lochridge and F. D. Lown.)

James, Meredith Haddon..................................Bryan.
A Preliminary Study of Scale Insects Occurring in Texas.

Joplin, John Finley..................................Sipe Springs.
The Cost of Producing Corn and Cotton in Texas. (With Y. M. Langdon.)

Kelly, Charles Patrick..................................New York, N. Y.
A Test of the Relative Values of Sorghum Hay and Cotton Seed Hulls for Fattening Steers. (With R. E. Caldwell.)

Kennedy, Bruce Rankin..................................Greenville.
Economical Production of Butter Fat Based on Tests at State Fair, 1911.

Laake, Ernest William..................................New Ulm.
The Effect of Different Quantities and Different Sources of Potash on Irish Potatoes.

Lane, Grady J..................................Valley Mills.
Chemical, Physical, and Pot Culture Studies of Certain Soils in Montgomery County, Texas. (With M. H. Young.)

Langdon, Young Mitchell..................................Hutchins.
The Cost of Producing Corn and Cotton in Texas. (With J. F. Joplin.)

Lochridge, Charles Frank..................................Iowa Park.
A Chemical, Physical, and Pot Culture Study of Two Typical Soils of Limestone County, Texas. (With J. W. Jackson and F. D. Lown.)

Lockett, William Richard . . . . Cleburne.
Prickly Pear (Opuntia) Cultivation and Feeding Value.
Lodal, Martin Gorman . . . . Gorman.
Equipment and Management of a Modern Dairy Farm. (With J. M. Thomson.)
Lown, Franklin David . . . . Thornton.
A Chemical, Physical, and Pot Culture Study of Two Typical Soils of Limestone County, Texas. (With J. W. Jackson and C. F. Lochridge.)
Miller, Richard Sandford . . . . San Saba.
Economical Production of Butter Fat Based on Tests at State Fair, Dallas, Texas, 1912. (With J. L. Culbertson.)
Miller, William Zachary . . . . College Station.
The Organization, Equipment, and Management of a 500-Acre Mixed Farm in Central Texas. (With W. Ohlendorf.)
O'Conor, Daniel . . . . Laredo.
The Effect of Moisture and Temperature Upon the Development of the House Fly.
Ohlendorf, Walter . . . . Lockhart.
The Organization, Equipment, and Management of a 500-Acre Mixed Farm in Central Texas. (With W. Z. Miller.)
Oliver, Clarence . . . . Lampasas.
The Relation of Hog Cholera Infection in the Blood of Hogs to Their Temperature. (With A. B. Taylor.)
Roberts, Clay Adlai . . . . Beaumont.
The Influence of Heredity on Prolificacy in Duroc-Jersey Hogs. (With E. W. Harrison.)
Scofield, James Arthur . . . . Hillsboro.
A Test of the Relative Values of (a) Cotton Seed Hulls and Silage and (b) Cotton Seed and Cotton Seed Meal for Fattening Cattle. (With C. A. Whitfield.)
Stevens, Dillon Tarrant . . . . College Station.
Treatise on Tree Surgery. (With G. G. Hall.)
Stone, James Milton . . . . Houston.
Equipment and Management of a Modern Dairy Farm for Pure-Bred Jersey Cattle.
Taylor, Albion Burne . . . . Burnet.
The Relation of Hog Cholera Infection in the Blood of Hogs to Their Temperature. (With C. Oliver.)
Thomson, Jasper McDonald . . . . Florence.
Equipment and Management of a Modern Dairy Farm. (With M. G. Lodal.)
Tolbert, Weimer Sid . . . . Miami.
Treatment for Echinorhynchus Gigas. (With E. G. Eagleston.)
Wallis, Turner Thomas . . . . Cuero.
History and Development of Agriculture and Manual Training in the Public Schools of Texas.
Weinert, Herbert George Henry . . . . Geronimo.
Some Secondary Effects of Fertilizers on Soils. (With E. A. Eversberg.)
White, Theodore Frierson . . . . Lott.
A Study of the Sub-Soil of the Lufkin Fine Sandy Loam.
Whitfield, Charles Austin . . . . San Angelo.
A Test of the Relative Values of (a) Cotton Seed Hulls and Silage and (b) Cotton Seed and Cotton Seed Meal for Fattening Cattle. (With J. A. Scofield.)
Young, Marvin Hooper . . . . Montgomery.
Chemical, Physical, and Pot Culture Studies of Certain Soils in Montgomery County, Texas. (With G. J. Lane.)

In Architectural Engineering.

Burton, Allan . . . . Clarendon.
A Twelve-Story Apartment House.
Fountain, Edmund Jones, Jr . . . . Bryan.
An Art Museum.
Josserand, Lewis Peter . . . . Groveton.
A Sixteen-Story Hotel.

Langford, Ernest.......................................Bertram.
A Theater.
Orth, William Alva.....................................Yoakum.
A Church.

In Chemical Engineering.

Christian, James Russell...............................Houston.
The Action of Coagulants Used in the Mechanical Filtration of Water.
Holland, Charlie Jenkins...............................Brownwood.
A Study of the Physical Properties of Texas Portland Cement.
Hudgins, Lewis Allison.................................Houston.
The Identification of Edible Oils.

In Civil Engineering.

Alexander, Melville Richard............................Navasota.
Location and Estimates of Spurs from Houston and Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With W. F. Bourland and W. B. Gist.)
Anderson, John Victor..................................Abilene.
Stadia Topographical Survey and Map of "E" Portion of Campus. (With B. Fitzpatrick and E. H. Mills.)
Baylor, Robert Emmet...................................Montell.
Stadia Topographic Survey and Map of "S" Portion of Campus. (With J. G. Rollins and J. J. Waters.)
Beazley, Charles Nugent................................Grapeland.
Water Consumption and Sewage Discharge at the A. & M. College. (With W. A. French, Jr., and F. A. Roberts.)
Birk, Ralph Adolphus...................................Iowa Park.
Stadia Topographic Survey and Map of "N" Portion of Campus. (With J. V. Lyles and L. N. Oliphant.)
Borchert, William Charles..............................Kyle.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With J. N. Davis, Jr., and F. L. Montgomery.)
Bourland, William Fowler...............................Valley Springs.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With M. R. Alexander and W. B. Gist.)
Cade, King Charles.....................................Birkville.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With J. M. Gonzalez and B. Whiteside.)
Cain, Robert Wofford...................................Athens.
Location, Design, and Estimates for a System of Storm Sewers for the Upper Campus. (With J. R. Hill and L. V. Lienhard.)
Chinski, Charles Clarence..............................Beaumont.
Stadia Topographic Survey and Map of "W" Portion of Campus. (With W. T. Donoho.)
Davis, John Newton, Jr.................................Hico.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With W. C. Borchert and F. L. Montgomery.)
Donoho, William Thompson...............................Utopia.
Stadia Topographic Survey and Map of "W" Portion of Campus. (With C. C. Chinski.)
Fitzpatrick, Brandon...................................Columbus.
Stadia Topographic Survey and Map of "E" Portion of Campus. (With J. V. Anderson and E. H. Mills)
French, William Allen, Jr..............................Kaufman.
Water Consumption and Sewage Discharge at the A. & M. College. (With C. N. Beazley and F. A. Roberts.)
Gillette, Paul Clifford................................Houston.
Design of an Eight Panel, 184 Foot Span Parker Truss.

Gist, William Belew..Nacona.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With M. R. Alexander and W. F. Bourland.)
Gonzalez, Jose de la Mercer, Jr........................Tampico, Mexico.
Location and Estimates of Spurs from Houston and Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With K. C. Cade and B. Whiteside.)
Grissom, Roy John..Fort Worth.
Plans and Estimates for Certain Campus Walks and Pavements.
Hill, John Rutledge..Wills Point.
Location, Design, and Estimates for a System of Storm Sewers for the Upper Campus. (With R. W. Cain and L. V. Lienhard.)
Jones, Hamlet Park..Kaufman.
Survey, Plans, Specifications, and Estimates for the Improvement of the Bryan-College Road. (With A. F. Sayers.)
Lienhard, Leon Victor..Cuero.
Location, Design, and Estimates for a System of Storm Sewers for the Upper Campus. (With R. W. Cain and J. R. Hill.)
Lyles, John Vinston..Blue Grove.
Stadia Topographic Survey and Map of "N" Portion of Campus. (With R. A. Birk and L. N. Oliphant.)
Montgomery, Fred Lawrence................................Corsicana.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With W. C. Borchert and J. N. Davis.)
Oliphant, Luther Nugent....................................Rice.
Stadia Topographic Survey and Map of "N" Portion of Campus. (With R. A. Birk and J. V. Lyles.)
Olson, John N..Galveston.
Survey, Design, and Estimates for Street Paving in Bryan, Texas. (With R. R. Schroeter.)
Roberts, Frank Allen..Austin.
Water Consumption and Sewage Discharge at the A. & M. College. (With C. N. Beazley and W. A. French, Jr.)
Rollins, Joseph Guy..Merit.
Stadia Topographic Survey and Map of "S" Portion of Campus. (With R. E. Baylor and J. J. Waters, Jr.)
Sayers, Albert Fawcett......................................Houston.
Survey, Plans, Specifications, and Estimates for the Improvement of the Bryan-College Road. (With H. P. Jones.)
Schroeter, Richard Ralph....................................Double Horn.
Survey, Design, and Estimates for Street Paving in Bryan, Texas. (With J. N. Olson.)
Spence, Thomas Reese..College Station.
Design of an Eight Panel, 175 Foot Span Parker Truss.
Waters, Jerome Jackson, Jr..................................San Antonio.
Stadia Topographic Survey and Map of "S" Portion of Campus. (With R. E. Baylor and J. G. Rollins.)
Whiteside, Blount..Lott.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With K. C. Cade and J. M. Gonzalez.)

In Electrical Engineering.

Apperson, Roy Stephenson....................................Commerce.
The Design and Construction of a Magnetic Clutch.
Bowler, Samuel Edwin..Denver, Colo.
The Design of a Rotary Converter Sub-Station.
Brown, James Franklin..Cherokee.
Translation from German of E. Kosack's "Elektrische Starkstromanlogen, Machinen, Apparate, Schaltungen, Betrieb" (Power Installations, Machines, Apparatus, Connections, Operation.)
Burleson, Wade Hampton......................................San Saba.
Design, Construction, and Test of a Direct Current Lifting Magnet.

Campbell, Price........Weatherford.
Design of a Special Switchboard. (With J. M. McDonald.)
Chambers, Taylor Lee........Sherman.
Telephone Talking Currents and Their Wave Shapes.
Hefner, William Jesse........Cuero.
A Study of Current Transformers. (With A. C. A. Kraege.)
Keller, Jules........Houston.
The Grouping of Transformers. (With R. B. Simon.)
Koinm, Charles Herman........Aldine.
A Study of Rectifiers. (With E. S. Lammers, Jr.)
Kraege, Alfred C. A........Yorktown.
A Study of Current Transformers. (With W. J. Hefner.)
Lammers, Edwin E., Jr........Dallas.
A Study of Rectifiers. (With C. H. Koinm.)
McDonald, James Milton........Ozona.
Design of a Special Switchboard. (With P. Campbell.)
Miller, Robert H........Ben Franklin.
Tests of a Compound Steam Engine and Generator.
Nolte, Robert Walker........New Orleans, La.
The Design, Construction, and Test of a 1-2 Kw. Transformer.
von Rosenberg, Herbert John........Hallettsville.
A Study of Rectifiers.
Simon, Raphael Bernard........Houston.
The Grouping of Transformers. (With J. Keller.)
Tucker, David Halsey........Missouri City.
The Design, Construction, and Test of a Single Phase Transformer.
Walker, Phelp White........Gonzales.
An Experimental Study of the Telephone.

In Mechanical Engineering.

Anderson, Rexford Olan........Denton.
Tests of the Steam Engine Direct-Connected to a Two-Stage Air Compressor.
Johnston, Lemuel Munroe........Bryan.
Experimental Study of the Air-Lift Method of Pumping Water from Deep Wells. (With J. H. Nussbaum and L. F. Walzem.)
Lidiak, Joseph Paul........Muldoon.
Tests of a Compound Steam Engine and Generator. (With J. H. Lorenz.)
Lorenz, John Henry........Stockdale.
Tests of a Compound Steam Engine and Generator. (With J. P. Lidiak.)
Nussbaum, Julius Harold........Mexia.
Experimental Study of the Air-Lift Method of Pumping Water from Deep Wells. (With L. M. Johnston and L. F. Walzem.)
Torrence, William Clifton........Waco.
Tests of a Two-Stage Air Compressor.
Walzem, Louis Fred........New Braunfels.
Experimental Study of the Air-Lift Method of Pumping Water from Deep Wells. (With L. M. Johnston and J. H. Nussbaum.)

In Textile Engineering.

Collins, James William Herring........Mexia.
Organization, Equipment, Cost, and Operation of a 20,000 Spindle Cotton Mill, Making a Six-Yard Sheeting.
Dreiss, Edward, Jr........San Antonio.
Organization, Equipment, Cost, and Operation of a 5,000 Spindle Cotton Mill, Making an Eight-Ounce Duck.
Nugent, Clyde Wellington........Conroe.
The Organization and Equipment of a 20,000 Spindle Cotton Mill.
Tigner, Joseph Bingham........Duke.
Organization, Equipment, Cost and Operation of a 5,000 Spindle Cotton Mill, Manufacturing a Three-Yard Sheeting.

No Course Specified.

Dr. Marion McMillan........New York City.
Municipal Sanitary Organization.

ALUMNI.

(Association Organized 1886.)

P. L. DOWNS, Temple	President
J. WEBB HOWELL, Bryan	First Vice President
C. O. MOSER, Dallas	Second Vice President
R. G. TABER, Houston	Third Vice President
A. MITCHELL, College Station	Secretary-Treasurer
R. B. PEARCE, College Station	Assistant Secretary-Treasurer

Executive Committee.

P. L. DOWNS. A. MITCHELL. A. C. LOVE.

On the following pages are given the names of all graduates of the College, with the courses of study pursued and the degrees obtained; their occupations and residences are also given as far as known. The alumni are requested to aid the Secretary of the Association in making the roll as accurate as possible. Each alumnus should send the Secretary a postal card at the opening of each session, giving his address and occupation.

From the opening of the College in 1876 to its reorganization in 1880, the studies were elective, and led to appropriate degrees. Degrees received in this interval are noted in the list of names.

From 1881 to 1887 there were two prescribed courses, the Agricultural and the Mechanical, but no degrees were given.

From 1888 to 1895 there were four prescribed courses, leading to the degrees of Bachelor of Scientific Agriculture (B. S. A.); Bachelor of Civil Engineering (B. C. E.); Bachelor of Scientific Horticulture (B. S. H.); Bachelor of Mechanical Engineering (B. M. E.).

From 1895 to 1901 the four prescribed courses remained the same, but the degree in each was Bachelor of Science (B. S.), the particular course being specified in the diploma.

In 1901 the Horticultural course was merged with the Agricultural. In 1903 the course in Electrical Engineering was added; in 1904, the course in Textile Engineering; in 1905, the course in Architectural Engineering; in 1908, the course in Chemical Engineering, and in 1909, the course in Architecture, making eight regular courses leading to the degree in Bachelor of Science (B. S.) in Agriculture, in Architecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering and in Textile Engineering.

The courses of study are indicated by the use of Roman numerals, as follows:

I. Agriculture.
II. Horticulture.
III. Mechanical or Mechanical Engineering.
IV. Civil Engineering.
V. Electrical Engineering.
VI. Textile Engineering.
VII. Architectural Engineering.
VIII. Chemical Engineering.
IX. Architecture.

Names of deceased alumni are marked with an asterisk.

ABBOTT, E. G., 1894, IV, Captain Coast Artillery, United States Army, Fort Wood, Bedloe's Island, N. Y.
ABBOTT, H. T., 1898, II, Bookkeeper, 4010 Cedar Springs, Dallas.
ABNEY, CARLTON C., 1905, IV, Bank Clerk, Lampasas.
ABNEY, G. R., 1906, IV, Civil Engineer, Eagle Lake.
ABRAHAMS, J. E., 1900, III, Cashier, with Jos. Landa, New Braunfels.
*ABRAHAMS, M. L., 1903, III.
ACKER, L., 1902, IV, Roadmaster, H. & T. C., Ennis.
ADAMS, R. E., 1910, IV, Hardware Merchant, Santa Anna.
ADAMS, A. S., 1895, IV, Engineer, Bryan.
ADAMS, F. L., 1892, I, Farmer and Merchant, Snyder.
ADAMS, LEM, 1908, IV, Draftsman, Oregon Short Line, Pocatello, Idaho.
ADAMS, Q., 1912, VII, with Cravens & Cage, Houston.
ADAMS, T. A., 1908, VI, Mining Engineer, Inde Gold Mining Co., Inde, Durango, Mex.
ADICKES, C. F., 1910, IV, Fred A. Jones Co., Dallas.
ADKISSON, W. T., 1910, IV, U. S. Eng. Corps, Shreveport, La.
*ADRIANCE, D., 1886, I. M. S., 1890, Bryan.
AGUAYO, N. A., 1904, III, Parass, Mex.
AHRENBECK, W. T., 1891, III, Minister, Huntsville.
AKERS, M. E., 1902, IV, Farmer, Stowell.
ALDWELL, R. E., 1909, V, Cashier, First National Bank, Sonora.
ALEXANDER, D. E., 1880, Fort Worth.
ALEXANDER, M. R., 1913, IV, Navasota.
ALEXANDER, R. L., 1902, IV, 320 Hutton Bldg., Spokane, Wash.
ALLEN, F., 1906, V, Campbellton.
ALLEN, L. E., 1881, III, Manager Allen's City Drug Co., Marlin.
ALLEN, W. H., 1888, I, Physician and Surgeon, Marlin.
ALTGELT, E. J., 1892, IV, Real Estate, San Antonio.
ALTGELT, E. S., 1904, IV, Civil Engineer, San Antonio, Box 902.
AMSLER, L. D., 1889, III, Cashier Farmers' National Bank, Hempstead.
AMTHOR, A. W., 1895, IV, Civil Engineer for Brownsville Land and Irrigation Co., Brownsville.
ANDERSON, J. V., 1913, IV, Abilene.
ANDERSON, R. O., 1913, III, Westinghouse Machine Co., Pittsburgh, Pa.
ANDERSON, W. D., 1890, I, Manager Ice Works, Waxahachie.
ANDREWS, V., 1884, III, Physician, Floydada.
APPERSON, R. S., 1913, V, care Crocker-Wheeler Co., Ampere, N. J.
ARMSTRONG, J. F., 1906, III, Mining, Guanajuato, Mexico, Box 33.
ARMSTRONG, M. F., 1882, III, Real Estate and Banking, Mission.
ARNESON, E. P., 1910, IV, Light and Power Co., San Antonio.
ARNOLD, E. C., 1906, III, Chemist for Inde Gold Mining Co., Inde, Durango, Mexico.
ASHFORD, G. W., 1912, V, General Elec. Co., Schenectady, N. Y.
ASHTON, JOHN, 1906, I, Ranchman, Linares, N. L., Mexico.
ASTIN, E. H., 1899, III, Banker, Bryan.
ATWELL, B. D., Jr., 1912, V, W. E. & M. Co., Wilkinsbury, Pa.
ATWELL, C. S., 1912, IV, Surveyor U. S. Eng. Corps, Hutchins.
BAADE, J. E., 1911, VII, Waco.
BACKUS, U. J., 1890, III, Farmer, Eagle Pass.
BAILEY, C. C., 1892, IV, Cashier First National Bank, Bartlett.
BAINES, H., 1906, V, Traffic Dept., S. W. Tel. &. Tel. Co., Waco.
BAKER, L. A., 1910, V, Westinghouse Electric Co., 500 Kelly St., Wilkinsburg, Pa.
BAKER, J. J., 1879, Merchant, Homer, La.
BAKER, SEARCY, 1882, III, Assistant Manager South Texas Lumber Co., Houston.
BALL, W. A., 1912, V, Engineer, Corpus Christi.
BALLARD, LUKE L., 1905, I, Stock Farmer, Waco.
BANKS, A. L., 1879, B. S., 1892, M. S., 1895, Professor of Mathematics, College of Industrial Arts, Denton.
BARCLAY, R. L., 1898, III, President and Manager Reed Transfer Co., Temple.
BARHAM, G. S., 1902, III, Physician, Nacogdoches.
BARHAM, R. E., 1903, IV, Engineer, Nacogdoches.
BARNES, G. W., 1911, I, Extension Dept. A. & M. College, Stillwater, Okla.
BARNES, R. M., 1898, III, General Merchant, Abilene.
BARNES, S. E., 1899, I, DeLaval Separator Co., 165 Broadway, New York.
BARNITZ, R. B., 1912, VII, 2nd Lieutenant U. S. A., Ft. Clark.
BARWIS, I. G., 1910, VII, Architectural Draftsman, Fairfield, Iowa.
BASS, R. O., 1909, V, Electrician, Los Angeles, Cal.
BATTE, T. R., 1902, IV, Chief Engineer Rio Bravo Oil Co., Houston.
BAUER, F., 1904, III, Ginner, Burton.

BAUM, J. A., 1903, IV, Civil Engineer, Georgia.
BAYLOR, R. E., 1913, IV, Instrument Man, Panama Canal, Balboa.
BEALL, V. Z., 1908, IV, Student M. I. of Tech., 263 Newbury, Boston, Mass.
BEAN, B., 1907, IV, C. E., 1909, Civil Engineer, Los Angeles, Cal.
BEAUREGARD, R. T., 1910, IV, M. of W. Dept. T. & B. V. Ry., Teague; Home address, San Antonio.
BEAZLEY, C. N., 1913, IV, Grapeland.
BECHERT, F. J., 1911, III, M. E., 1912, 1913, Ch. E., Instructor, M. E. Dept., College Station.
BECKER, ADOLPH, 1905, I, Merchant, Brenham.
BEEMAN, T. R., 1903, IV, Locating Engineer, C. M. & St. P. R. R., 617 White Bldg., Seattle, Wash.
BEESLEY, T. J., 1908, III, Manager Rockdale Oil Co., Rockdale.
BEESLEY, W. S., 1892, IV, Merchant, Abilene.
BEILHARZ, W. E., 1903, III.
BENJAMIN, J. W., 1905, IV, City Engineer, Cuero.
BENTLEY, C. N., 1910, V, Northern Electric Co., Montreal, Canada.
BERNAY, C. L., 1904, IV, Paving and Roads Dept., Texas Oil Co., Houston.
BEYER, F. C., 1892, III, Mgr. Mason Ice and Power Co., Mason.
*BIBERSTEIN, F. R., 1882, III.
BIERING, S. R., 1902, IV, Chief Claim Clerk, G. C. & S. F. Ry., Galveston.
BING, B. L., 1910, I, Farmer, Waller.
BIRK, R. A., 1913, IV, Iowa Park.
BITTLE, P. B., 1896, I, Superintendent City Schools, Henderson.
BITTLE, T. C., JR., 1900, IV, Farming, Texarkana.
BITTLE, A. W., 1894, I, Principal High School, Washington, La.
BIVINS, M., 1907, V, Mattress Manufacturer, Longview.
BLACK, M., Minister, Sterling City.
BLACK, R. S., 1907, IV, Nacoyari, Sonora, Mexico.
BLACKALLER, G. A., 1911, I, Stockman, Frio Town.
BLACKMON, G. H., 1910, Asst. Professor of Horticulture, A. & M. College, College Station.
BLAKE, H. H., 1907, IV, Markham.
BLAKE, T. W., 1904, I, Gen. Sales Mgr. South Texas Lumber Co., Houston.
*BLAKEMORE, T. E., 1880.
BLAND, L. F., 1899, I. Medical Student, Memphis, Tenn.
BLEDSOE, F. F., 1880, Minister, Bedias.
BLOCK, J. A., 1912, IV, Houston.
BLOOR, A. W., 1895, I, Attorney, Austin.
BLOUNT, S. L., 1896, I, U. S. Veterinary Inspector, Bureau of Animal Industry, Department of Agriculture, 913 W. Lenda St., Fort Worth.
BOCOCK, J. H., 1894, I, Traveling Salesman, Thaxton, Va.
BOETTCHER, R. B., 1900, III.
BOGEL, W. W., 1907, V, Marfa.
BORCHERT, W. C., 1913, IV, Kyle.
BORN, THOMAS C., 1905, I, General Contractor, Houston.
BOURLAND, W. F., 1913, IV, Rodman S. A. & A. P. Ry. Co., Yoakum.
BOWER, L. J., 1913, I, Stephenville.
BOWER, W. E., 1908, V, Farmer, R. F. D. No. 5, Hico.
BOWLER, S. E., 1913, V, Fort Worth.
BOYCE, CHARLES W., 1905, I, Farmer, Charco.
BOYCE, W., JR., 1907, IV, Roadmaster C. G. W. R. R., Chicago, Ill.
BOYETT, H., 1912, IV, Bryan.
BOYKIN, R. E., 1892, III, Teacher.
BOZEMAN, J. R., 1912, V, Unsan, Korea.
BRANDT, R. L., 1906, III, Draftsman, Box 808, San Antonio.
BRANNIN, C. P., 1909, VI, Educational and Vocational Sec., Y. M. C. A., Dallas.
*BRAUN, P., 1888, Sán Antonio.
BRAUNIG, V. H., 1910, V, Asst. Supt. Elect. Dept., San Antonio Gas and Elec. Co., San Antonio.
BRINKMANN, H., 1906, III, 1907, V, 12 Barrett St., Schenectady, N. Y.
*BRITTINGHAM, W. F., JR., 1890, IV.
BRETSCHNEIDER, W., 1898, IV, Assistant Superintendent M. of W. Dept., T. & N. O. R. R., Houston.
BREWER, H. A., 1899, III, Farmer, R. F. D. No. 3, Dale.
BRICE, H. A., 1910, IV, Fred A. Jones Co., Birmingham, Ala.
BRISCOE, W. P., 1911, IV, City Engineering Dept., Houston.
BROGDON, S. T., 1908, III, Minister Vanderbilt University, Nashville, Tenn.
BROWN, B. Mc., 1911, III, Draftsman S. P. Shops, San Antonio.
BROWN, C., 1911, V, S. W. Tel. & Tel. Co., Dallas.
BROWN, C. G., 1906, V, Instructor, Sibley College, Ithaca, N. Y.
BROWN, H. P., 1911, I, Farmer, Mathis.
BROWN, J. F., 1913, V, 1008 Polk Ave., Houston.
BROWN, J. J., 1912, I, Instructor Agriculture, Moore.
BROWN, R. M., 1901, IV, in charge of track, Guayquil & Quito Ry., Box 37, Guayquil, Ecuador, S. A.
BROWN, T. H., 1879, Claim Agent T. & N. O. Ry., Houston.
BROWN, W. H., 1880, IV, Planter, Navasota.
BRUCE, E. L., 1894, IV, Lawyer, Orange.
BRUNDRETT, G. T., 1908, V, with Stone & Webster, Dallas.
BRYAN, B. F., 1897, I.
BRYAN, W. I., 1900, II, Chief Engineer Flour Mills, Celina.
BRYANT, W. T., 1911, VIII, Ch. E., 1913, Asst. in Chemistry, College Station.
BUCHANAN, T. S., 1909, IV, Resident Engineer F. F. C. C. N. of Mex., Ajono, Kilo, 110 Michoacan, Mexico.
BUCKMAN, C. D., 1889, IV, Denison Grocery Co., Denison.
BUCKNER, J. F., 1912, IV, Rodman Santa Fe, Cleburne.
BUFORD, F. L., 1892, IV, Assistant Engineer G. C. & S. F. Ry., Silsbee.

BUHLER, C. M., 1897, III, Chief Clerk, Disbursements, S. P. Co., 7532 Hampson St., New Orleans, La.
BUHLER, C. W., 1892, IV, Chief of Car Department S. A. & A. P. Ry., San Antonio.
BUHLER, W. A., 1900, III, Grocer, Victoria.
BULLARD, T. O., 1899, III, I. & G. N. Shops, Mart.
BURCK, L. B., 1889, IV, Broker, 631 S. Spring St., Los Angeles, Cal.
BURFORD, J. M., 1882, III, Physician and Surgeon, Independence.
BURCHARD, C. L., 1886, III, Cashier, Bank of Goliad.
BURGOON, C. E., 1895, III, M. E., 1899, Eng. Federal Bldg., Chicago, Ill.
BURLESON, R. C., 1912, IV, 1st Lieutenant, U. S. Army, Fort Myer, Va.
BURLESON, R. W., 1895, III, Cashier W. M. & Co. Bank, San Saba.
BURLESON, W. H., 1913, V, Brush Electric Co., Galveston.
BURMEISTER, C. A., 1908, I, U. S. Dept. of Agriculture, Amarillo.
BURNEY, J. W., 1896, III, Lumberman, Kerrville.
BURNEY, R. L., 1906, IV, General Contractor, 416 Conroy Bldg., San Antonio.
BURNS, A. C., 1907, I, Veterinary Surgeon, Cleburne.
BURNS, H. E., 1906, IV, Draftsman Colorado Southern R. R., Beaumont.
BURNS, J. C., 1904, I, Professor of Animal Husbandry, College Station.
BURRITT, W. P., 1906, III, City Engineer, San Antonio.
BURT, F. O., 1910, IV, Contractor, Waco.
BURTON, A., 1913, VII, Student Columbia University, 2940 Broadway, New York
BUTLER, J. V., 1912, IV, County Road Engineer, Huntsville.
BYARS, G. E., 1910, IV, City Engineer, Waco.
CABANISS, W. M., 1912, V, Draftsman Texas Portland Cement Co., Dallas.
CADE, K. C., 1913, IV, Birkville.
CAIN, R. W., 1913, IV, Cotton factor, Italy.
*CALDWELL, J. C., 1883, III.
CALDWELL, J. R., 1912, III, Manual Training Teacher, Blanco.
CALDWELL, R. E., 1913, I, care Lackawana Farm, Hillsboro.
CALLAWAY, W. H., 1912, IV, Student Columbia University, New York.
CAMPBELL, D., 1879, Stockman, El Paso.
CAMPBELL, P., 1913, V, Weatherford.
CAMPBELL, R. W., 1899, III, President and Bookkeeper Campbell-Hutcheson Hardware Co., Roff, Okla.
CARDWELL, W. W., 1913, I, Lockhart.
CARLIN, W. J., 1910, III, Draftsman City Engineer's Office, Houston.
CARLISLE, E., 1906, I, 38 W. 35th St., New York.
CARPENTER, M. M., 1902, I, Mining Engineer, 66 Scott St., Tucson, Arizona.
CARRINGTON, H., 1912, IV, Civil Engineer, Bay City.
CARROLL, J. G., 1911, V, Westinghouse E. and M. Co., 413 Pitt St., Wilkinsburg, Pa.
CARSON, A. B., 1897, IV, Civil Engineer, Bryan.
CARSON, J. M., JR., 1886, I, Treasurer A. & M. College, College Station.
CARSON, J. W., 1886, I, Director of the Harris County Demonstration Farms, Houston.
CARSON, R. C., 1899, III, Machinist, 1305 N. Robinson St., Cleburne.
CARTER, J. D., 1900, IV, Civil Engineer, 905 Main St., Dallas.
CARTER, J. W., Civil Engineer, El Paso.
CARTER, T. H., 1912, V, Celeste.
CARTER, W. T., JR., 1898, I, Scientist in Bureau of Soils, Washington, D. C.
CARUTHERS, F., 1885, I, Cashier United States Land Office, Oklahoma City, Okla.
CARUTHERS, R. B., 1912, IV.
CASEY, P. D., 1908, VI, S. W. Tel. & Tel. Co., Dallas.
CAVEN, G. P., 1897, I, Clerk M. K. & T. Ry., 200 San Jacinto St., Dallas.
CAVITT, J. S., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
CAVITT, W. H., 1897, III, Oil Well Contractor, Box 101, Batson.
CELY, H. M., 1910, V, Teacher, Frankston.
CHAMBERS, M. L., 1879, Real Estate and Loans, 501 1-2 Main St., Fort Worth.
CHAMBERS, T. L., 1913, V, with Western Elec. Co., Hawthorn, Chicago.
CHANEY, L. P., 1912, V, Texas City Trans. Co., Texas City.
CHEWNING, J. W., 1913, I, Chemist, Feed Control, College Station.
CHINSKI, C. C., 1913, IV, Beaumont.
CHRISTEN, J. C., 1912, V, 500 Kelly St., Wilkinsburg, Pa.
CHRISTIAN, B. H., 1910, IV.
CHRISTIAN, J. R., 1911, IV; VIII, 1913, Houston.
CHURCH, MARION S., 1905, I, Assistant County Attorney, Dallas County, Dallas.
CHURCH, W. G., 1912, V, General Electric Co., Schenectady, N. Y.
CLARK, H., 1895, I, Physician, Crowell.
CLAYTON, W. D., I, M. S., 1897, Farmer, Wakefield, La.
CLEMENT, T. H., JR., 1900, IV, Engineer L. H. & G. Ry. Co., Hemphill.
CLONTS, T. P., 1904, IV, City Engineer, Muskogee, Okla.
COBBS, S. A., 1896, IV, Civil Engineer, Muskogee, Okla.
COBBS, T. D., JR., 1904, IV, Attorney at Law, San Antonio.
COCHRAN, E. G., 1879, Physician and Surgeon, Pearsall.
COCHRAN, J., 1904, IV, C. E., 1905, Trussed Concrete Steel Co., Detroit, Mich.
COCK, C. E., 1911, IV, Contractor, Belton.
COGHILL, E. S., 1911, IV, Inst. Man, U. S. Eng. Corps, Crockett.
COHN, S. L., 1897, IV, Advertising Manager Sherman Oil and Cotton Co., Sherman.
COLE, A. T., 1909, V, Engineering Department Pacific Elec. Ry. Co., Y. M. C. A., Bldg., Los Angeles, Cal.
COLEMAN, M. M., 1910, I, Ranchman, Rodger, N. M.
COLEMAN, N. P., 1911, III, Lineman Bryan Tel. Co., Bryan.
COLLINS, J. A., 1907, V, Louisiana Creosoting Co., Winnfield, La.
COLLINS, J. W. H., 1913, VI, Mexia.
COLLINS, A. B., 1912, V, Inspecting Eng., Elmhurst, N. Y.
CONNELLEE, E. T., 1913, I, Eastland.
CONNER, A. B., 1904, I, Agronomist for Texas Experiment Station, College Station.
CONNER, T. P., 1912, I, Red Oak.
COOK, E. A., 1892, III, Cleburne.

CORLETT, R. H., 1911, IV, Civil Engineer for the Texas Co., Wichita Falls.
CORNELL, A. L., 1908, IV, Auditor M. K. & T. Ry. Co., Denison.
COTTINGHAM, I. A., 1886, III, Assistant General Manager H. & T. C. Ry., 2811 Fannin St., Houston.
COTTINGHAM, W. P., 1892, IV, Manager Texas Blue Print and Supply Co., Houston.
*COTTON, H., 1897, IV.
COUCH, E., 1897, III, City Engineer's Office, Houston.
COULTER, H. T., 1895, II, Physician, Rockdale.
COULTER, W. J., 1895, III, Merchant, Bryan.
COULTER, R. E., 1901, III, Foreman Fuel Department, T. & P. Ry. Co., Texarkana.
COUSINS, R. W., 1899, III, Electrical Eng. Ind. Steel Co., Gary, Ind.
COWART, I. E., 1913, I, Student University of Missouri, Columbia, Mo.
COX, D. W. S., 1892, IV, Sales Agent, Dallas.
COX, H. T., 1912, V, Power and Light Co., Hereford.
COX, R. W., 1913, I, Scientific Asst. Sub-Station No. 2, Troup.
COZART, R. B., 1911, III, Assistant Superintendent Lufkin Foundry and Iron Works, Lufkin.
CRAVENS, J. R., 1882, III, General Agent, Fire Insurance, Houston.
*CROCKETT, C. M., 1910, IV.
CROCKETT, J. B., 1908, IV, C. E., 1909, Assistant Professor of Civil Engineering, College Station.
CROUCH, J. H., 1910, V, Salesman, Alvin.
CROW, W. E., 1898, II, Physician, Dallas.
CRUM, J. B., 1911, VII, Bookkeeper American Exchange National Bank, Dallas.
CRUSE, JOHN T., 1905, I, Farmer and Teacher, Eagle Lake.
CULBERTSON, J. L., 1913, I, Waxahachie.
CULVER, DAN, 1908, III, Salesman, Lampasas.
CUNNINGHAM, F. H., 1910, V, Service Agent Otis Elevator Co., Houston.
CUNNINGHAM, A., 1879, Railway Postal Clerk, Palacios.
CUNNINGHAM, P. E., 1907, IV, Junior Engineer Mississippi River Commission, Box 404, Vicksburg, Miss.
CURTIN, W. H., 1912, III, City Eng. Dept., Houston.
CUSHING, D., 1891, III, Pharmacist, Yorktown.
CUSHING, E. B., 1880, III, C. E., 1899, Chief Engineer Construction Sunset-Central Lines, President Board Directors A. & M. College, Houston.
DAHME, A. F., 1904, IV, Engineer, Yorktown.
DALE, I., 1908, IV, Instrumentman, Clarksdale, Miss.
DALE, J., 1908, III, 330 E. 6th St., Oklahoma City, Okla.
DALLMEYER, C. D., 1911, VI, with Swift Mfg. Co., Columbus, Ga.
DARST, T. B., 1911, I, Farming and Stock Raising, Richmond.
DASHIELL, W. R., 1891, IV, Physician, Surgeon for the Victor Fuel Co., Gray Creek, Col.
DAVENPORT, H. S., II, Agriculturist, 2 Crawford St., Palestine.
DAVIS, D. O., 1911, I, Farming, McKinney.
DAVIS, J. M., 1903, IV, Banker, Forney.
DAVIS, J. N., 1885, III, Farming and Stock Raising, Hico.
DAVIS, J. N., JR., 1913, IV, Hico.
DAWSON, N. A., 1884, III, Lawyer, Austin.
DAY, T. R., 1902, I, Real Estate, El Paso.
DAZEY, W. L., 1894, IV, Dentist, Hillsboro.
DEAN, J. S., 1906, VII, Architect, State Architect's Office, Sacramento, Cal.
DELLIS, J. L., 1912, IV, Draftsman Pacific Electric Ry. Co., Los Angeles, Cal.
DEVINE, P. S., 1912, IV, Laredo.
DIBRELL, Z. H., 1910, V, Salesman, Mecca Hotel, Houston.
DICKERSON, A. F., 1910, V, Gen. Elec. Co., Schenectady, N. Y., now Asst. Chief of Illumination P.-P. Int. Exposition, San Francisco, Cal.
DICKERSON, W. E., 1911, IV, County Surveyor, Cuero.
DICKSON, J. L., 1912, IV, Asst. Eng. Freeport T. Wn. Co., Velasco.
DICKSON, R. E., 1912, I, Asst. Agronomist Texas Experiment Station, College Station.
DIETERT, R. H., 1888, III, Car Foreman H. & T. C. Ry., 1214 Prairie St., Houston.
DINTER, H. A., 1911, V, Hico Electric Light and Power Co., Hico.
DODSON, C. P., 1911, V, Manager Light Plant, Nocona.
DONALDSON, C. B., 1893, III, Farmer, Kyle.
DONOHO, W. T., 1913, IV, Utopia.
DORSEY, W. L., 1911, V. Asst. Commandant Peacock's Military College, San Antonio.
DOWELL, H. B., 1913, I, McKinney.
DOWNS, J. R., 1879, Lawyer, Waco.
DOWNS, P. L., Vice President First National Bank, Temple.
DRIESS, E., JR., 1913, VI, San Antonio.
DRISDALE, W. E., 1889, II, Physician and Surgeon for Victor-Amer. Fuel Co., Gray Creek, Colo.
DROSS, P. H., 1902, III, General Manager F. Marty Foundry Co., Meridian, Miss.
DUDLEY, F. E., 1885, II, Real Estate, Hollywood, Cal.
*DUGAN, G. H., 1881.
DUGGAN, A. P., 1895, IV, Manager Littlefield Lands, Littlefield.
DUNN, R. B., 1904, III, Merchant, Benchley.
DURST, BRUNO L., 1905, IV, Civil Engineer, Dallas.
DWYER, T. J., 1912, IV, International Boundary Com., El Paso.
DWYER, W. F., 1899, I, Car Clerk A., T. & S. F., Ry., Deming, N. M.
EAGLESTON, E. G., 1913, I, Smithville.
EGAN, J. T., 1913, I, Farmer, Haslet.
EDDINS, R. R., 1909, V, Electrician, Marlin.
EDSALL, A. B., 1907, I, Farmer, Spring Creek.
EDWARDS, J. F., 1883, III.
EBERSPACHER, F., 1906, IV, Retail Stationer, 221 N. 20 St., Birmingham, Ala.
EBERSPACHER, G., 1896, III, Machinist S. P. Ry., Houston.
EBERSPACHER, R., 1901, III, Automobile Dealer, Corpus Christi.
EHLERS, P., 1907, V, Automatic Electric Co., Dallas.
EHLERS, V. M., 1905, Sanitary Engineering, La Grange.

EHLERS, W. J., 1910, VII, Architect, Bishop.
EHLINGER, G. E., 1912, I, La Grange.
EHLINGER, L., 1906, IV, Draftsman, General Land Office, Austin.
EHLINGER, R. B., 1913, I, Deputy State Feed Inspector, College Station.
EHRHARDT, E. J., 1910, IV.
*ELDRIDGE, H. M., 1897, IV.
ELLIOTT, J. E., 1910, VII, Eng. for Gordon-Jones Const. Co., San Antonio.
ELLIOTT, F. G., 1906, VI, with Bush & Witherspoon, Cotton Brokers, Waco.
ELLIS, H. E., 1910, V, Western Electric Co., Oklahoma City, Okla.
ELLIS, B. V., 1892, I, Physician, 1515 Boulevard St., Houston.
ELLIS, FORT O., 1894, IV, Sheriff and Tax Collector, Harrisonburg, La.
ELLIS, O. L., 1908, V, Telephone Co., Clovis, N. M.
ELROD, H. E., 1901, III, Consulting Engineer, S. W. Life Bldg., Dallas.
ENGLISH, M. G., 1909, IV, Civil Engineer, Port Arthur.
EPPLER, H. G., 1912, V, Cisco.
EPPRIGHT, F. G., 1902, III, Machinist I. & G. N. Shops, San Antonio.
EPSTEIN, S. G., 1907, IV, Resident Engineer, Interurban, Dallas.
ERHARD, E. C., 1903, III, Machinist I. & G. N. R. R. Co., Palestine.
EUDALY, E. R., 1910, I, Livestock and Dairy Agent, Chattanooga, Tenn.
EVANS, C. D., 1899, IV, Civil Engineer, Shreveport, La.
EVANS, C. M., 1908, I, Superintendent Agricultural Extension Dept., College Station.
EVERSBERG, E. A., 1913, I, Brenham.
EVERSBERG, O. L., 1910, I, with Armour & Co., Brenham.
FAIRBAIRN, G. C., 1912, V, Port Arthur Light and Power Co., Port Arthur.
FARMER, A. G., 1895, III, Stockman, Junction.
FARMER, J. S., 1912, I, Mission Irrigated Farm Co., San Antonio.
FAUST, H., 1900, III, First National Bank, New Braunfels.
FAUST, W., 1897, IV, Cashier of First National Bank, New Braunfels.
FEARHAKE, J. D., 1889, IV, Attorney, 5 Nassau St., New York City.
FEHRENKAMP, E. B., 1901, IV, Bookkeeper, Kenedy.
FERGUSON, A. M., 1894, II, M. S., 1896, Seed Breeding, Sherman.
FIELD, H. Y., 1891, I, Stock Breeder, Argyle Avenue, Dallas.
FIGH, J. R., 1912, I, S. W. Tel & Tel. Co., Box 1809, Houston.
FINNEY, C. B., 1896, IV, Mining Engineer, Apartado 173, Oax., Mexico.
FITZGERALD, A. H., 1895, I, Druggist, Gonzales.
FITZGERALD, L., 1900, III, Superintendent G. H. L. & W. Co., Gary, Ind.
FITZHUGH, E. E., 1880, Real Estate, Waco.
FITZPATRICK, B., 1913, IV, Columbus.
FLEMING, C. H., 1908, VI, Bookkeeper, Cisco.
FLOYD, J. F., 1892, III, Lumber Dealer, Texarkana.
FLYNT, H. C., 1890, I, Real Estate, 810 Gunter Bldg., San Antonio.
FORD, F. D., 1911, IV, Cordell, Okla.
FORDTRAN, F. L., 1887, I, Physician, Kerrville.
FORSGARD, C. H., 1911, V, Engineer, Dallas.
FORSGARD, OSCAR L., 1905, IV, Resident Engineer H. & T. C. Ry., Home Address, 1204 Holman Ave., Houston.
FORSYTH, J. M., 1912, III, 1913, M. E., with Allis-Chalmers, West Allis, Wis.
FORT, F. W., 1879, Wholesale Grain, Provident Building, Waco.
FOUNTAIN, E. J., JR., 1913, VII, Salesman, Bryan.
FOUNTAIN, S. J., 1901, IV, Professor of Architecture, College Station.
FOUNTAIN, T. D., 1904, IV, Merchant, Dalhart.
FOUNTAIN, T. L., 1901, IV, Civil Engineer, Dallas.
FOUTREL, G. F., 1898, III, Machinist, 225 S. Presa St., San Antonio.
FOWLER, E. G. R., 1894, IV, Lawyer, Palestine.
FOY, H. F., JR., 1908, V, Engineer Bell Tel. Co., St. Louis, Mo.
FOY, V. H., 1902, III, S. W. Tel. & Tel. Co., Pine Bluff, Ark.
FRANCIS, A. J., 1912, I, College Station.
FRAZIER, B., 1911, I, Manager Clifton Stock Farm, Waco.
FREEMAN, J. H., 1887, III, Insurance Agent, Austin.
FRENCH, W. A., 1913, IV, Kaufman.
FRIES, JOHN, 1912, IV, Levelman S. A., N. & G. Ry., San Antonio.
*FULLER, T. A., 1879.
FURNEAUX, W. H., 1909, I, American Exchange National Bank, Dallas.
GARBADE, W. T., 1901, Adjunct Professor University of Texas, Medical Department, Galveston.
GARNETT, R. M., 1902, IV, Section Foreman S. P. Ry., Bay City.
GARZA, C. M., 1905, IV, Brownsville.
GEREN, P. M., 1912, VII, Architect, Austin.
GIESECKE, A. C., 1909, IV, Draftsman Utah L. & P. Co., Salt Lake City, Utah.
GIESECKE, B. E., 1911, VII, Architect, Austin.
GIESECKE, F. E., 1886, III, M. E., 1890, Professor of Architecture, University of Texas, Austin.
GIESECKE, G., 1884, III, Merchant Miller, 228 Washington St., San Antonio.
GIESECKE, W. E., 1892, III, New York City.
GILBERT, C. L., 1911, V, U. S. Army, Fort Adams, R. I., Home Address, Smithville.
GILBERT, J., 1894, I, Physician, Austin.
GILBERT, W. A., 1907, I, Farmer, Mabank.
GILBERT, W. R., Farmer, Austin.
GILLESPIE, S. E., 1903, III, Draftsman, The Murray Co., Dallas.
GILLETTE, P. C., 1913, IV, Bellaire.
GILMORE, H. C., 1896, III, Electrician, Barden Electric Co., Houston.
GIST, BYRON, 1910, I, Stock Farming, Littlefield.
GIST, W. B., 1913, IV, Nacona.
GLASS, R. H., 1904, III, Dentist, Hearne.
GLASS, WILL V., 1905, I, Druggist, Lufkin.
GLEASON, B., 1906, V, Postmaster, Hico.
GLEASON, H., 1903, IV, Manager Hico Light and Power Co., Hico.

GLOVER, W. F. H., 1898, I, Planter, James Island, S. C.
GOLDBERG, I. L., 1896, II, Merchant, Jefferson.
GONZALES, J. de la M., 1913, IV, Tampico, Tampico, Mexico.
GOODWIN, W. M., 1912, V, Western Elec. Co., Cicero, Ill.
GRADY, M. L., 1909, IV, Civil Engineer for Kirby Lumber Co., Houston
GRAY, O. H., 1911, V, San Antonio Steam Laundry, San Antonio.
GRANAU, H. F., 1907, IV, Merchant, Bellville.
*GRAVES, C. S., 1882, III.
GRAVES, D. R., 1903, III, Signal Maintainer, T. & P. Ry., 314 S. Jennings Ave., Fort Worth.
GRAY, J. L., 1884, III, Civil Engineer.
GREEN, C. E., 1912, V, General Elec. Co., Schenectady, N. Y.
*GREEN, R. B., 1884, III.
*GREENWOOD, F. J., 1898, IV
GRIESENBECK, C. H., 1912, VII, Architect, 1101 S. W. Life Bldg., Dallas
GRIFFITHS, T. W., JR., 1900, III, with Griffiths & Co., Lumber Dealers, Dallas.
GRISSOM, R. J., 1913, IV, Professor of Mathematics B. B. A., Bryan.
GROTE, F. H., 1911, I, Taft.
GRUENE, E., 1887, III, Piano Dealer, New Braunfels.
GRUPE, G., 1892, III, Superintendent L. & P. Plant, Cleburne.
*GUGENHEIM, L. Z., JR., 1906, V, E. E., 1907.
GURLEY, D. R., JR., 1892, Farmer, Waco.
HACKNEY, J. G., 1906, III, Merchant, Stamford.
HAILE, C. R., 1912, IV, San Antonio.
HADEN, J. H., 1879, Farmer and Stockman, R. F. D. No. 2, Barry.
HALL, G. G., 1913, I, Houston.
HALTOM, G. T., 1906, V, Signal Supervisor, Waco.
HANER, E., 1904, IV, Division Engineer Natl. R. R. of Mexico, Gomez Palacios, Mexico.
HANNA, HOWARD E., 1905, I, Traveling Salesman Hughes-Percell Paint Co., Kansas City, Mo.
HANSCHKE, R., JR., 1890, III, Manager Advertising Department Freie Presse fuer Texas Publishing Co., 225 King William St., San Antonio.
*HARE, H. C., 1887, III.
HARE, S. C., 1882, III, Lawyer, 566 S. Travis St., Sherman.
HARRINGTON, C. B., 1902, I, Physician, Lake Charles, La.
HARRISON, C. C., 1899, II.
HARRISON, E. W., JR., 1913, I, Scientific Asst. Sub-Station No. 7, Spur.
HARRISON, J. G., 1902, III, Architect, Wilson Bldg., Dallas.
*HARRISON, W. A., 1898, II.
HARRIS, D. B., 1909, IV, Bank Clerk S. Texas Com. Natl. Bank, Houston.
HAUCK, CHARLES F., 1905, III, Captain Dredge Boat, Galveston.
HAWKINS, J. W., 1893, I, General Land Office, Austin.
HEIDELBERG, H. A., 1903, III, Iola Portland Cement Co , Dallas.
HEFNER, W. J., 1913, V, with General Elec. Co., Schenectady, N. Y.
HELDENFELS, C. A., 1903, I, Lumber Dealer and Architect, Beeville.
HELDENFELS, F. W., 1909, VII, Lumber Dealer, Beeville.
HELLER, J. H., 1913, I, Buda.
HELLER, W. L., 1908, I, Wholesale Florist, R. F. D. No. 1, Alvin.
HEMPHILL, G. H., 1912, V, Otis Elec. Co., Houston.
HENDERSON, C. M., 1911, I, Broker, Linz Bldg., Dallas.
HENDERSON, H. W., 1891, I, Cotton Buyer, Ladonia.
HENSEL, F., JR., 1907, I, Student Cornell University.
HEREFORD, J. B., 1887, III, General Agent, Fire Insurance, Dallas.
HERNSTADT, S. J., 1890, IV, Member New York Cotton Exchange, 60 Broadway, N. Y.
HIGGINS, W. S., 1907, IV, Roadmaster G. H. & S. A. Ry., Victoria.
HILDEBRANDT, A. M., 1896, II, M. S., 1898, Minister, Sewanee, Tenn.
HILL, JOHN E., JR., 1904, III, 1905, V, E. E., 1907, Bell Tel. Co., Waco.
HILL, J. R., 1913, IV, care County Engineer, Waco.
HILL, M. J., 1907, V, District Traffic Manager S. W. Tel. & Tel. Co. Marshall.
HOEFLE, K. F., 1912, IV, Amalgamator, Unsan, Chosen, Japan.
HOFFER, T. B., 1904, IV, Resident Engineer Texas Company, Wichita Falls.
HOFFMAN, F. C., 1888, III, Jeweler, New Braunfels.
HOFMAN, R. W., 1906, IV, Merchant, Mason.
HOHN, CAESAR, 1912, I, Post Graduate Student A. & M., College Station.
HOLCOMB, R. M., 1902, Clerk Auditor's Office, P. E. Ry. Lines, Los Angeles, Cal.
HOLLAND, C. J., 1913, VIII, Brownwood.
HOLLOWAY, T. E., 1908, I, U. S. Department of Agriculture, New Orleans, La.
HOLMAN, J. R., 1895, IV, Chief Engineer Oregon & Washington R. R., Seattle, Wash.
HOLZMAN, F. R., 1902, I, Real Estate, Dallas.
HOLZMAN, WALTER R., 1905, I, Veterinary Inspector, B. A. I, Lubbock.
HOMANN, A. C., 1898, III, Cashier First State Bank, Rowena.
HOMEYER, C. W., JR., 1908, IV, Engineer Medina Irrigation Co., Lytle.
HOOKER, R. M., 1910, I, Farming, Tyler.
HOOPER, J. J., 1901, I, Professor of Animal Husbandry, Kentucky State College, Lexington, Ky.
HOPKINS, S. H., 1890, I, Attorney, Gonzales.
HORN, T. L., 1899, III, Machinist I. & G. N. Shops, Palestine.
HORTON, C. K., 1909, IV, Civil Engineer for Horton & Horton, Houston.
HOUGH, S. A., 1885, III, County and District Clerk, Rock Springs.
HOUSTON, F. N., 1894, IV, Track Foreman T. & N. O., R. R., Beaumont.
HOWELL, J. W., 1894, I, President and Manager Bryan Cotton Oil Co., Bryan.
HOWELL, R. W., 1896, I, Cashier First National Bank, Bryan.
HOYO, G. A., 1906, I, Government Superintendent and Agriculturist, Calumet, Okla.
HUDGINS, F. D., 1897 IV, General Superintendent Jas. C. Travilla Co., Fort Worth.
HUDGINS, L. A., 1913, VIII, Asst. Chemist, College Station.
HULL, B. E., 1904, IV, Chief Engineer, Texas Co., Box 1805, Houston.
HUNT, N. H., 1912, V, Electrical Engineer, Texas City.
HUTCHINSON, E. W., 1889, IV, Secretary-Treasurer Moore-Cortes Canal Co., Houston.

HUTCHINSON, O. D., 1893, I, Farmer and Stockman, Chickasha, Okla.
HUTCHINSON, W. F., 1897, IV, Bank Cashier, Winter Haven, Fla.
HUTH, T. G., 1912, III, Mechanical Engineer, San Antonio.
HUTSON, A. C., 1900, IV, Engineer Natl. Bd. Fire Underwriters, New York City.
HUTSON, H. L., 1896, III, Chief Engineer A. M. Lockett & Co., Ltd., 533 Barron St. New Orleans, La.
HUTSON, W. F., 1895, IV, Assistant Engineer G. H. & S. A. Ry., El Paso.
HUTSON, M. B., 1909, V, Salesman Electric Appliance Co., New Orleans, La.
HYNDS, H. G., 1910, V, Texas City Ter. Co., Texas City.
INGRAM, H. L., 1910, V, Texas Traction Co., Dallas.
ISBELL, J. M., 1903, IV, Civil Engineering Department M. K. & T. Ry., Oklahoma City, Okla.
ITZ, F., 1911, IV, Medina Irrigation Co., San Antonio.
*JACK, D. M., 1879.
JACKSON, J. W., 1913, I, Scientific Asst. Sub-Station No. 3, Angleton.
JACOT, H., 1902, Merchant Mining Machinery, Apartado 414, Mexico City.
JAHN, R. S., 1910, IV, Draftsman Sunset-Central Lines, Houston.
JAHN, F. C., 1894, II, Horticulturist, Gonzales.
JAMES, M. H., JR., 1913, I, Horticulturist, Brazoria.
JAPHET, G., 1894, III, Wholesale Fruit and Produce, 917 Commerce St., Houston.
JAPHET, W. E., 1904, IV, Civil Engineer Producers Oil Co., Houston.
JENNINGS, J. W., 1911, I, Farmer, San Antonio.
JENSON, W. M., 1912, I, Ice Cream Mfg. Co., Durant, Okla.
JOBSON, H. H., 1908, I, U. S. Department of Agriculture, College Station.
JOBSON, T. S., 1903, III, Signal Supervisor G. H. & S. A. Ry., Box 553, Del Rio.
JOHN, J. R., 1910, IV, Draftsman Sunset Lines, Houston.
JOHNSON, M. L., 1912, V, Eng. of Con. A. L. & W. Co., Amarillo.
JOHNSON, T. L., 1912, I, Manager Farm, Slidell.
JOHNSTON, L. M., 1913, III, Heating Engineer, College Station.
JOHNSTON, T. J., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
JONAS, E. C., 1894, IV, Draftsman Resident Engineer's Office, G. H. & S. A. Ry., 1002 Avenue D, San Antonio.
JONAS, H. F., 1888, IV, Bridge Engineer Sunset Lines, Houston.
JONES, H. P., 1913, IV, Kaufman.
JONES, C. E., 1908, I, Bookkeeper First National Bank, Bryan.
JONES, G. M., 1912, I, Medical Student Galveston.
JONES L. R., 1908, IV, Engineer Gulf Refining Co., Port Arthur.
*JONES W. F. 1889, IV.
JOPLIN, J. F., 1913, I, Sipe Springs.
JORDAN, H. P., 1895, IV, Attorney at Law, Waco.
JOSEY, N. L., 1888, I, Merchant, San Antonio.
JOSSERAND, L. P., 1913, VII, Student Columbia University, 2940 Broadway, New York.
JOUINE, G. P. F., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
KAHN, M. S., 1900, II, Physician and Surgeon, Hallettsville.
KELL, E., 1894, III, Mechanical Engineer, 2221 Columbus St., New Orleans, La.
KELLER, J., 1913, V, with Western Elec. Co., Hawthorn, Chicago.
KELLY, C. P., 1913, I, New York City.
KELLY, H. J., 1911, IV, Orange.
KENDRICK, R. T., 1906, I, Ranchman, Dimmit.
KENEDY, O., 1883, III, Life Insurance, Georgetown.
KENNEDY, B. R., 1913, I, Dairy Manager, Falfurrias.
KENNEDY, E. J., 1912, I, Student University of Texas, Austin.
KERR, E. W., 1896, III, M. E., 1899, Professor of Mechanical Engineering Louisiana State University, Baton Rouge, La.
KERR, J. G., 1898, I, Veterinarian, 135 Cypress St., Beaumont.
KIDD, J. W., E. E., 1909, Electrician, Reclamation Service, Elephant Butte, N. M.
KINCAID, E. B., 1911, I, San Antonio.
KINSLOE, R. H., 1903, Magnolia Pet. Co., Beaumont.
KIRKPATRICK, L. R., 1906, III, Farmer, McKinney.
KIRSCHNER, I., 1901, IV, Resident Engineer W. F. & N. W. Ry., Leedey, Okla.
KLEINSMITH, M. L., 1901, IV, Resident Engineer, Maricopa, Cal.
KLEUSER, M. C., 1901, VII, Architect, 421 Scarbrough Bldg., Austin.
KLOSS, E. L., 1902, III, Machinist I. & G. N. Shops, San Antonio.
KLOSS, O. H., 1907, IV, Assistant Cashier First National Bank, Bellville.
KNOLLE, A. P., 1888, IV, Physician, Ellinger.
KNOLLE, B. E., 1894, III, Physician, Industry.
KNOLLE, E. R., 1887, III, Physician, Brenham.
KNOLLE, O. J., 1897, I, Physician, Industry.
KNOLLE, W. H., 1888, IV, Physician and Surgeon, 3941 Canal St., New Orleans, La.
KOINM, C. H., 1913, with Denver Gas and Elec. Co., Denver, Colo.
KOONS, J. V., 1911, III, Civil Engineer, El Campo.
KOPKE, L. J., 1880, IV, Civil Engineer and Rice Planter, 1068 Liberty Ave., Beaumont.
KOWALSKI, B., 1906, IV, with Fred A. Jones Bldg. Co., Dallas.
KRAUSKOPH, E. M., 1911, IV, U. S. Engineer Miss. River Com., Vicksburg, Miss.
KREUGER, C. C., 1912, IV, Salesman S. A., M. and S. Co., San Antonio.
KRAEGE, A. C. A., 1913, V, with General Elec. Co., Schenectady, N. Y.
KROULIK, HUGO J., 1905, Bookkeeper, Taylor.
KUEHNE, J. F., 1889, II, Manufacturing and Commission Agent, Box 5104, Mexico City.
KYLE, A. J., 1897, I, Stockman, Pecos.
KYLE, E. J., 1899, II, Professor of Horticulture and Dean of School of Agriculture, College Station.
*KYLE, H. C., 1896, I.
KYLE, J. A., 1890, I, Physician and Surgeon, Member of Board Directors A. & M. College, Binz Bldg., Houston.
*KYLE, T. M., 1893, III.
LAAKE, E. W., 1913, I, U. S. Dept. of Agriculture, Dallas.
LAMMERS, E. S., JR., 1913, V, 415 Kelly St., Wilkinsburg, Pa.
LANDA, L. M., 1907, V, Automatic Elec. Co., Dallas.

LANE, G. J., 1913, I, Valley Mills.
LANGDON, Y. M., 1913, IX, Hutchins.
*LANGDON, W. F., 1911, IV.
LANGFORD, E., 1913, VII, Bertram.
LANGSTON, J. A., 1912, I, Cleburne.
*LAUDERDALE, J. R., 1908, I.
LAUDERDALE, J. C., 1911, IV, Assistant Engineer Bureau of Public Works, Manila, P. I., Home Address, Somerville.
LAW, F. M., 1895, I, Cashier First National Bank, Beaumont.
*LAWLEY, L. P., 1902, I.
LEAR, J. E., E. E., 1909, Associate Professor of Electrical Engineering, College Station.
LEARY, EDGAR M., 1905, IV, Civil Engineer, with Mex. & N. W. R. R., Home Address, Alvin.
LEE, D., 1911, IV, Student Cornell University, Ithaca, N. Y.
LEE, H. F., 1909, V, Dallas Tel. Co., Dallas.
LEE, KNOX, 1908, V, Electrical Foreman, Beaumont.
LEGGETT, C. W., 1910, III, Chemist Fidelity Cotton Oil Co., Houston.
LEGGETT, W. W., 1889, IV, Co. "C," 1st Bat. U. S. Engineers, Manila, P. I.
LEHMANN, E. W., 1913, E. E.
LEMPERT, L. H., 1907, V, General Electric Co., Lynn, Mass.
LENERT, L. G., 1906, IV, Resident Engineer T. C. R. R., Rising Star.
LENZ, L., 1907, IV, Draftsman R. of W. Department S. P. R. R., Box 464, Houston.
LEROY, L. F., 1911, III, San Antonio.
LEWIS, F., 1894, IV, Farmer, Forney.
LEWIS, J., 1900, I, Veterinary Surgeon, Greenwood, Miss.
LEWIS, L. L., 1893, I, M. S., 1894, Professor of Zoology and Veterinary Science Oklahoma A. & M. College, Stillwater, Okla.
LEWIS, M. G., 1899, III, Locomotive Inspector, Schenectady, N. Y.
LICHTE, F., 1906, VI, Merchant, Cleburne.
LIDIAK, J. P., 1913, III, Westinghouse Machine Co., Pittsburg, Pa.
LIENHARD, L. V., 1913, IV, Cuero.
LILLARD, S. A., 1910, IV, Manager Flour Mill Decatur.
LILLARD, W. W., 1904, IV, U. S. Eng. Corps, Sabine.
LILLY, R. C., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
LINDEMAN, C. E., 1903, III, Machinist G. C. & S. F. Ry., Cleburne.
LINDEMAN, JAMES E., 1905, III, Draftsman Ft. W. & D. C. R. R., Childress.
LINDLEY, T. L. P., 1912, I, Wortham.
LINDNER, M., 1908, III, Box Manufacturer, San Antonio.
LIPSCOMB, R. S., 1882, III, Physician, Grapevine.
LITTLEJOHN, R. G., 1891, IV, City Assessor and Collector, City Hall, Fort Worth.
LOCHRIDGE, C. F., 1913, I, Iowa Park.
LOCHRIDGE, J. L., 1910, IV, Medina Irrigation Co., Box 1140, San Antonio.
LOCKETT, N., 1903, IV, Engineering Department, care Williamson, Balfour & Co., Taltal, Chile.
LOCKETT, W. R., 1913, I, Cleburne.
LODAL, M. G., 1913, I, Gorman.
LOMANITZ, S., 1908, Chemist, Houston.
LOONEY, L. P., 1910, I, Farmer, R. F. D. No. 1, Commerce.
LORENZ, J. H., 1913, III, Stockdale.
LOUWIEN, H., 1911, V, Denver Gas and Electric Co., Denver, Col.
LOVE, A. C., 1899, IV, Associate Professor of Civil Engineering, A. & M. College, College Station.
LOVING, J. W., 1906, I, Ranchman, Jermyn.
LOWN, F. D., 1913, I, Thornton.
LUCKETT, W. H., 1891, I, Physician and Surgeon, 112 W. 119th St., New York, N. Y.
*LUCKETT, W. M., 1894, III.
*LUHRSEN, C. W., 1900, IV.
LYLES, J. V., 1913, IV, Blue Grove.
McADAMS, E. E., 1911, IV, Instructor in Physics, College Station.
McANELLY, E. E., 1911, VII, Architect, 1201 S. W. Life Bldg., Dallas.
McCALL, H. S., 1903, IV, McCall-Moore Eng. Co., Waco.
McCONNELL, J. P., 1911, IV, M. K. & T. Ry., Oklahoma City, Okla.
McCONNICO, S. F., 1901, I, Fire Insurance Inspector, Praetorian Bldg., Dallas.
McCORMICK, GEO., JR., 1891, III, Assistant Superintendent G. H. & S. A. Ry., El Paso.
McCOWN, J. W., 1910, I, Whitney.
McCULLOUGH, C. C., 1886, C. E., 1890, Surgeon U. S. Army, Manila, P. I.
McCULLOUGH, R. E., 1912, IV, Houston.
McDANIEL, A. A., 1909, I, Physician, Gibbs Bldg., San Antonio.
McDONALD, J. M., 1913, V, Ozona.
McDONALD, W. A., 1910, V, Houston.
McDONALD, H. F., 1895, III, Draftsman General Land Office, Austin.
McDONALD, W. H., 1902, I, Farmer, Athens.
McDOWELL, C. H., 1912, I, Farmer, Corpus Christi.
McEACHERN, C. A., 1912, I, Merchant, Route 1, Austin.
McELROY, T. E., 1908, I, U. S. Department of Agriculture, Stillwater, Okla.
McFARLAND, ARTHUR, 1905, III, U. S. Engineering Corps, Port Arthur.
McFARLAND, J. L., 1912, V, with General Electric Co., Schenectady, N. Y.
McGINNIS, F. K., 1900, II, Horticulturist, Dallas.
McGINNIS, N. M., 1908, I, Instructor College of Industrial Arts, Denton.
McGRAW, M., 1911, III, Merchant, Dallas.
McGREGOR, F., 1903, IV, Contractor, Houston.
McILHENNY, J. L., 1910, IV, Natl. Steel Rail Co., 227 Woodlawn Ave., San Antonio.
McKAY, C., 1910, V, 500 Kelly St., Wilkinsburg, Pa.
McKAY, G., 1910, V, Longview.
McKAY, G., 1903, III, Longview Iron Works, Longview.
McKNIGHT, O. J., 1903, IV, Cashier Dalhart Bank, Dalhart.
McLAVY, R. B., 1903, III, Bastrop.

McLENNAN, LAMAR, 1905, I, State Feed Inspector, Oklahoma City, Okla.
McLEOD, J. H., 1908, I, Student University of Wisconsin, Madison, Wis.
McMAHAN, L., 1911, V, Merchant, Waco.
McMILLAN, F. N., 1912, I, Calvert.
McMILLAN, L. B., 1911, III, 1912, M. E., 1913, Ch. E., Student University of Wisconsin, 230 W. Gilman St., Madison, Wis.
McMILLAN, M. R., 1895, III, 1913, B. S., Physician and Surgeon, Health Dept., New York.
McMILLAN, S. A., 1909, I, Asst. Professor in Agronomy A. & M. College, College Station.
MacNAIR, H. J., 1887, III, 239 W. 39th St., New York City.
McNEIL, J. C., 1896, IV, Ranchman, Spur.
McQUEEN, T. B., 1884, III, Accountant, Marlin.
MABRY, R., 1889, IV, 806 Cherry St., Fort Worth.
MACKENSEN, B. C., 1884, III.
MACKENSEN, L., 1885, III, Farmer, Houston.
MAEDGEN, C. E., 1904, I, Banker, Temple.
MANGUM, R. L., 1912, V, Unsan, Korea.
MANSFIELD, B. J., 1912, VII, Instructor in Drawing, College Station.
MANSFIELD, R. H., 1903, IV, Eng. Dept. N. Y. C. & H. R. R., Room 3016, G. C. Station, New York City.
MARBACH, A., 1907, IV, Instrumentman for S. L. Clark, Cotulla.
MARBURGER, BERNARD, 1905, IV, Roadmaster H. & T. C., Ennis.
MAREK, E. L., 1907, IV, Draftsman, Pleasanton.
MARKHAM, E. L., 1902, IV, Assistant Engineer St. L. S. W. Ry., Pine Bluff, Ark.
MARKS, S. H., 1911, VI, Stockman, Mason.
MARTIN, E. L., 1899, IV, Assistant Superintendent M., L. & T. Ry., Lafayette, La.
MARTIN, H. B., 1895, III, Superintendent for Morey-Faulkhaber Construction Co., Caldwell
MARTIN, C. H., 1911, I, Stock Farmer, Mason.
MARTIN, S. H., 1911, I, Rancher, Mason.
MARTIN, S. P., 1912, V, Bryan.
*MARTIN, W. C., 1898, II, M. S., 1901.
MASSENBERG, W. G., 1894, IV, Division Engineer G. C. & S. F. Ry., Beaumont.
MATTHEWS, H. F., 1903, IV, Contractor, San Antonio.
MAXWELL, J. W., 1904, III, Manager Copper Mines, Panulcillo, Cocuimbo, Chile.
MAXWELL, N. C., 1907, IV, Bookkeeper, Hamilton.
MAYER, M. F., 1906, VII, Architect, San Antonio.
MEAD, J., 1897, IV, Resident Engineer, St. L., B. & M. Ry., Bay City.
MEECE, B. L., 1912, V, D. C. Mining Co., Unsan, Korea.
MEEK, R. W., 1904, III, Foreman T. & N. O. Signal Shops, Houston.
MENKE, C. H., 1910, Stockman, Hempstead.
*MERRETT, W. B., 1889, I.
MERIWETHER, W. T., 1891, IV, Tampico, Mexico.
METCALFE, J. D., 1906, IV, Eng. Brazos River Protection, Pitts Bridge.
METCALFE, T. P., 1911, I, Post Graduate Student University of Missouri, Columbia, Mo.
MIDDLEBROOK, E. S., 1889, IV, Manager for Lumber Manufacturing Plant, Nona.
MIDDLEBROOK, R. M., 1891, III, Sales Manager, Gibbs Bldg., San Antonio.
MIKESKA, H. J., 1910, IV, with Santa Fe, Davis, Okla.
MILEY, J. H., 1896, IV, Special Asst. to Attorney General of U. S., Wewoka, Okla.
MILLER, C. S., 1880, President Ballinger State Bank and Trust Co., Ballinger.
MILLER, E. A., 1908, I, Assistant State Horticulturist and Plant Pathologist, Austin.
MILLER, H. J., 1883, Banker, Bellville.
MILLER, J. D., 1912, IV, Municipal Eng., Winnsboro.
MILLER, M. J., 1911, IV, Fire Insurance Inspector, Fort Worth.
MILLER, R. F., 1909, I, Assistant A. & M. College of Montana, Bozeman, Mont.
MILLER, R. H., 1913, V, with General Elec. Co., Schenectady, N. Y.
MILLER, R. S., 1913, I, San Saba.
MILLER, W. Z., 1913, I, Farm Manager D. W. Glasscock, Mission.
MILLICAN, WAYNE, 1907, I, Stock Farmer, Richland.
MINEAR, SYLVESTER A., 1905, I. County Farm Demonstrator, Fort Stockton.
MINTER, C. J., 1909, I, Bank Clerk, Fort Worth.
MISTROT, G. A., JR., IV, Houston.
MITCHELL, A., 1894, IV, Professor of Drawing, College Station.
MITCHELL, W. H., 1894, IV, Druggist, Holland.
MITCHELL, A. F., 1909, IV, Civil Engineer, Eagle Lake.
MITTMAN, E. F., 1902, IV, Draftsman Ft. Worth & Denver City R. R., Fort Worth.
MONROE, J. S., 1900, IV, Assistant Engineer Mexican Central Ry., Mexico City.
MONTEMAYOR, R. R., 1911, I. C., Jaumune, Tampico, Mexico.
MONTGOMERY, F. L., 1889, I, Lawyer, Muskogee, Okla.
MONTGOMERY, F. L., 1913, IV, Corsicana.
MOORE, C. B., 1911, I, Stock Farmer, Van Alstyne.
MOORE, F., 1902, I, Teacher, 410 W. Second St., Fort Worth.
MOORE, G. F., 1908, IV, 1st Lieutenant U. S. Army, Fort Worden, Wash.
MOORE, G. G., 1903, IV, Farmer, DeKalb.
MOORE, J. M., 1913, M. S., Fayette, Ala.
MOORE, R., 1892, I, Druggist, Tilden.
MOORE, T. E., 1892, I, Secretary and Auditor Eureka Tel. Co., San Antonio.
MOORE, W. G., 1907, V, Manager Texas Power and Light Co., Paris.
MOORE, W. M., 1895, IV, President and General Manager, L. G. & R. M. Mining Co., S. W. Life Bldg., Dallas.
MOORE, W. S., 1911, I, Stock Farmer, Yoakum.
MORLEY, M. D., 1912, III.
MORRILL, C. R., 1891, IV, Assistant Superintendent G. H. & S. A. R. R., El Paso.
MORRIS, C. C., 1911, I, Farmer, R. F. D., No. 4, Henderson.
MORTON, O. L., 1911, III, Draftsman, Dallas.
MOSELEY, HAL, 1901, IV, Insurance Inspector, Box 309, Dallas.
*MOSELEY, W. E., 1883, III.
MOSER, C. OTTO, 1904, I, President North Texas Creamery Co., Dallas.
MOSER, E. F., 1912, I, Poultry Raiser, 1519 Ross Ave., Dallas.

MOURSUND, A. F., 1895, IV, Assistant Superintendent G., V. G. & N. R. R., Globe.
MOURSUND, E. M., 1897, IV, Resident Engineer H. & T. C. R. R., Ennis.
MOUSER, E. B., 1895, I, Physician, Electra.
MULLINS, E. Y., 1879, President Southern Baptist Theological Seminary, Louisville, Ky.
MUNSON, T. A., 1910, IV, Civil Engineer, Angleton.
MUNSON, A., 1908, V, Civil Engineer, Angleton.
MUNSON, H. W., 1909, V, Houston.
MYERS, A. L., 1907, V, Mfg. Agent, 111 New Montgomery St., San Francisco, Cal.
MYERS, O. W., 1900, III, 406 Austin St., Palestine.
MYERS, W. G., 1894, III, Mining, Parral, Mexico.
NAGLE, J. M., 1911, IV, Engineer Ft. Worth-Denton Traction Co., 902 State National Bank Bldg., Fort Worth.
NAVE, G. F., 1912, III, Clerk, S. A. & A. P. Ry., Kenedy.
NEALE, R. B., 1908, I, Stock Farmer, Archer City.
NEATHERY, D. E., 1892, I, Merchant, Farmersville.
NEFF, A. J., 1903, III, 1913, M. E., Consulting Engineer, 3111 Cole Ave., Dallas.
NEIGHBORS, A. H., 1911, VII, Medical Student, University of Texas, Galveston.
NESS, H., 1889, II, Horticulturist Experiment Station, College Station.
NETHERWOOD, D. B., 1908, III, 2nd Lieutenant Coast Artillery, San Diego, Cal.
NETHERWOOD, J. S., 1911, III, Draftsman Sunset-Central, Houston.
NEWELL, G., 1910, V, Westinghouse E. and M. Co., Houston.
NEWTON, G., 1898, I, Merchant, Thorndale.
NEWTON, J. W., 1912, VIII, Assistant in Chemistry A. & M. College, College Station.
NICHOLS, J. F., 1898, II, Attorney at Law, Greenville.
NICHOLS, J. R., 1889, I, Oculist, State Institutions, Austin.
NICHOLS, W. L., 1891, IV, Real Estate, Wilson Bldg., Dallas.
NOLTE, R. W., 1913, V, New Orleans, La.
NORTH, W. G., 1908, I, Farmer, Yoakum.
NUGENT, C. W., 1913, VI, Conroe.
NUSSBAUM, J. H., 1913, III, Allis-Chalmers, West Allis, Wis.
O'BAR, J. H., 1893, I, Cotton Buyer, Coleman.
O'CONOR, D., 1913, I, Laredo.
O'CONOR, T., 1910, V, 515 Soledad St., San Antonio.
OGLESBY, G. B., 1894, IV, Farming, Gordonville.
OHLENDORF, W., 1913, I, Lockhart.
OLDS, T. H., 1902, IV, Sao Paulo Light and Power Co., Sao Paulo, Brazil.
OLIPHANT, J. W., 1903, IV, Civil Engineer, with S. Gibbs, Huntsville.
OLIPHANT, L. N., 1913, IV, Rice.
OLIVER, C., 1913, I, Lampasas.
OLSON, J. N., 1913, IV, Galveston.
ORTH, W. A., 1913, VII, Merchant, Yoakum.
ORR, W. R., 1906, IV, Grocer, Llano.
ORTIZ, J. A., 1892, IV, Stockman, 915 Zaragossi St., Laredo.
OVERSHINER, E. M., 1897, IV, County Judge, Abilene.
PAPE, G. H., 1904, IV, Cotton Agent, Wilson Bldg., Dallas.
*PARK, C. M., 1896, IV.
PARKS, L. D., 1911, IV, Civil Engineer Frisco R. R., 589 St. Louis Ave., Springfield, Mo.
PARSONS, B. C., 1893, II, Deputy Collector of Customs, Terlingua.
PATRICK, A. T., 1883, III.
PARTRIDGE, R. C., 1912, III, Farming, Munday.
PATTERSON, J. C., 1912, I, Farmer, Goodnight.
PEARCE, R. B., 1911, IV, Instructor in Terracing, College Station.
PEARSON, H. A., 1893, IV, Farmer, Troy.
PEDEN, L. T., 1904, IV, Dewson & Fletcher, Houston.
PENDLETON, DAVID E., 1905, IV, Assistant Engineer M., K. & T. Ry., Trinity.
PENNER, W. A., 1906, V, Corsicana Light Co., Corsicana.
PENNINGTON, R. E., 1884, I, Lawyer, Brenham.
*PERLITZ, W. E., 1893, IV.
PESCAY, C. H., 1885, III, Special Agent, 911 Hennen Bldg., New Orleans, La.
PETER, L. S., 1911, V. Westinghouse Electric Co., Wilkinsburg, Pa.
PETERS, R. F., 1894, III, Chief Draftsman S. A. & A. P. Ry., San Antonio.
PFEUFFER, F. L., 1885, III, Real Estate Colonizing, Omaja, Cuba.
*PFEUFFER, W. O. R., 1888, I.
PFEUFFER, U. S., 1891, IV, Lumber Merchant, New Braunfels.
PHILPOTT, W. B., 1884, III, M. S., 1890, care D. M. Derden, Amarillo.
PICKETT, G., 1911, III, Medina Irrigation Co., Home Address, Karnes City.
PIRIE, J. E., 1904, with Street & Born, Contractors, Houston.
PIRIE, J. H., 1906, V, 1st Lieutenant Coast Artillery U. S. Army, Fort Warren, Mass.
PITTUCK, B. C., 1894, I, Division College Extension, A. & M. College, Stillwater, Okla.
POLANSKY, T., 1909, IV, Post Graduate Student Columbia University, New York.
POLK, W. A., JR., 1895, IV, Wholesale Grocer, Dallas.
POOL, H. M., 1911, IV, U. S. Army, Texas City.
POTTHAST, A. H., 1911, IV, Medical Student University of Texas, Galveston.
POTTS, A. T., 1907, I, Assistant Professor of Horticulture, College Station.
POTTS, R. J., 1906, IV, C. E., 1907, Professor of Highway Engineering, College Station.
*POULTER, R. J., 1899, II.
PRICE, W. A., 1905, I, Farmer, Reagan.
PROCTER, J. H., 1910, V, 1913, E. E., Westinghouse Elec. Co., Pittsburg, Pa.
PUCKETT, D. M., 1911, IV, Engineer, Los Andes, Chile, S. A.
PUCKETT, F. S., 1907, I, care N. C. Dept. of Agriculture, Raleigh, N. C.
PUCKETT, J. W., 1904, IV, Civil Engineer, Los Andes, Chile, S. A.
RADFORD, J. S., 1890, II, Manager Oriental Textile Mills, Houston.
RAGSDALE, J. W., 1890, I, Lawyer, Hallettsville.
RAMSAY, J. W., 1906, V, Instructor in Electrical Engineering, University of Texas, Austin.
RATCHFORD, W. P., 1892, III, County Surveyor, Del Rio.
RATHER, J. B., 1907, I, M. S., 1911, Assistant State Chemist, College Station.
RAWLINS, H. E., 1898, III, Superintendent Quarries Supply Co., Campo Florida, Cuba.

RAY, S. H., 1911, I, Graduate Student University of Illinois.
READING, R. S., 1910, V, Otis Elevator Co., Houston.
REESE, G. W., 1907, IV, Bosque-Wensley Lead Co., Denver, Colo.
*REICHARDT, F. A., 1879.
RENNERT, F., 1888, I, Commission Merchant, Rennert-Millette Co., San Antonio.
*RHODES, S. E., 1896, III.
RHOME, R. J., 1901, Attorney at Law, Fort Worth.
RICE, D., 1882, III, Public Weigher, 1107 Lamar St., Houston.
RICE, E. R., 1902, III, Gen. Manager of Efficiency Eng. Co., Bisbee, Ariz.
RIDENHOWER, R., 1903, IV, Hico.
RIDENOUR, C. A., 1909, IV, U. S. Engineer's Office, Dallas.
RIFE, A. J., 1909, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
RIKE, H. M., 1893, IV, Abstractor, Haskell.
RILEY, A. A., 1909, IV, Assistant Engineer T. & N. O. R. R. Co., Y. M. C. A. Bldg., Houston.
RISIEN, G. W., 1903, IV, Draftsman N. Y. C. & H. R. Ry., S. W. 129th St., New York City.
*ROACH, G. W., 1884, III.
*ROBBINS, A. J., 1911, III.
ROBERTS, C. A., 1913, I, Beaumont.
ROBERTS, F. A., 1913, IV, Austin.
*ROBERTSON, D. K., 1902, III.
ROBERTSON, R. L., 1909, I, Ranchman, Waelder.
ROBINSON, E. R., 1908, I, Ranchman, Dalhart.
ROBINSON, G. W., 1911, V, Brush Elec. Co., Galveston.
ROBSON, C. G., 1898, II, President Southern Tel. Co., LaGrange.
RODRIGUEZ, D., 1896, IV, Civil Engineer and Planter, 114 Zaraona St., C. Porfirio Diaz, Mexico.
ROGAN, CHAS, 1879, Lawyer, Austin.
ROGERS, B. F., 1889, IV, Banker, Jefferson.
ROGERS, C. P., 1900, II, Attorney at Law, Austin.
*ROGERS, G. A., 1887, III.
ROGERS, R. A., 1878, Cotton Factor and Commission Merchant, Galveston.
ROLLINS, A. P., 1906, IV, Asst. Eng. Medina Valley Irrig. Co., Natalia.
ROLLINS, C. W., 1893, IV, Civil Engineer Neches Canal Co., China.
ROLLINS, H. M., 1897, III, Foreman Gulfport Creosoting Works, Gulfport, Miss.
ROLLINS, J. G., 1913, IV, care County Engineer, Waco.
ROMBERG, C. B., 1912, III, Erecting Engineer Frick Co., Dallas.
ROSA, R. R., 1912, I.
ROSE, W. F., 1894, III, Wholesale Plumbing and Heating Supplies, San Antonio.
ROSEBOROUGH, W. D., 1909, IV, Civil Engineer, Dallas.
VON ROSENBERG, H. C., 1913, V, Hallettsville.
VON ROSENBERG, H. J., 1912, VII, Student Massachusetts Institute Tech., Boston, Mass.
ROSENTHAL, H. H., 1896, IV, Secretary and Treasurer J. J. Segal Co., Jefferson.
ROSS, F. R., 1894, I, Physician and Surgeon, Houston.
ROSS, J. G., 1894, IV, Attorney at Law, Cold Springs.
ROSS, J. L., 1902, IV.
ROSS, R., 1902, IV, care County Engineer, Waco.
ROUNTREE, T. D., 1898, IV, Physician, Lake Creek.
ROWELL, T. D., 1885, I, Attorney at Law, Jefferson.
RUBENKOENIG, H., 1904, III, Professor of Mechanical Drawing State Manuel Training Normal, Pittsburg, Kan.
RUDASILL, W. S., 1890, IV, Real Estate Dealer, Box 94, Sherman.
RUDLOFF, E. W., 1911, V, Otis Elevator Co., Houston.
RUDOLF, R. F., 1911, IV, U. S. Engineer, Box 404, Vicksburg, Miss.
RUST, W. M., JR., III, Signal Department, Seguin.
SAMMONS, THOMAS B., 1905, Hardware and Saddlery, Mission.
SAMPSON, W. E., 1908, IV, Assistant City Engineer, Beaumont.
SAMUCH, L., 1902, IV, Merchant, Hallettsville.
SANDERS, P. L., 1903, IV, Controller Galvez Hotel, Galveston.
SANDERS, W. O., 1896, II, Manager Parker Lumber Co., Bryan.
SANFORD, C. E., 1911, IV, with Cory, Harrison & Co., San Antonio.
SAUVIGNET, E. H., 1892, I, Physician, Laredo.
SAWYER, R., 1882, III, Breeder of High Grade Herefore Cattle, Clarendon.
SAYERS, A. F., 1913, IV, Houston.
SCARBOROUGH, JOHN, 1912, IV, Mining Eng. Unsan, Chosen, Japan.
SCHADT, C. A., 1907, V, Merchant, 27th St. and Ave. H, Galveston.
SCHAEFFER, R. E., 1908, III, Hardware Business, Schulenburg.
SCHAEDEL, C. T., 1912, IV, San Benito Drainage Co., San Benito.
SCHAWE, W. A., 1907, I, Hardware Merchant, Bowie.
SCHERER, C. L., 1896, IV, City Engineer, Beaumont.
SCHERER, W. A., 1898, II, Stockman, Anahuac.
SCHILLER, R. E., 1906, IV, C. E., 1908, U. S. Engineer, Dallas.
SCHLEY, C. C., 1910, V, Salesman W. E. Co., Dallas.
SCHLOM, C. L., 1912, IV, Gulf Pipe Line Co., Houston.
SCHMIDT, C. L., 1890, III, Pierce-Fordyce Oil Association, Laredo.
*SCHMIDT, D. T. C., 1894, IV.
SCHMIDT, H., 1908, I, Veterinarian Experiment Station, College Station.
SCHOLL, E., 1907, I, State Entomologist, Department of Agriculture, Austin.
SCHROEDER, E. A., 1911, VII, Draftsman, College Station.
SCHROEDER, ERWIN F., 1905, I, House Surgeon Boston Veterinary Hospital, 549 Albany St., Boston, Mass.
SCHROETER, H., 1907, IV, Inspector A. T. & S. F. Ry., Kerckhoff Bldg., Los Angeles, Cal.
SCHROETER, A., 1909, IV, Draftsman, 2119 Ave. I, Galveston.
SCHROETER, R. R., 1913, IV, Engineer, Cypress Mill.
SCHUMACHER, H. C., 1892, IV, Wholesale Grocer, Houston.
SCHWAB, L. C., 1911, III, Cuero.
SCOFIELD, J. A., 1913, I, Hillsboro.
SEWARD, O. .1907, IV, Office Engineer Gulf Pipe Line Co., Beaumont.

SEWELL, M. S., 1894, IV, Merchant, McGregor.
SHANKLIN, R. W., 1906, IV, Civil Engineer for Mexico & N. W. R. R., Nuevo Casas Grandes, Cia., Mexico.
SHEARER, D. M., 1909, IV, U. S. Engineer, Greenville, Miss.
SHEARER, T. R., 1912, I, Secretary New Era Gravel and Drainage Co., Houston.
SHERRARD, R. G., 1910, V, 2nd Lieutenant U. S. Army, Fort Liscum, Alaska.
SHERRILL, O. W., 1910, I, Farmer, Kerens.
SHIELS, R. T., 1910, V, General Electric Co., Chicago, Ill.
*SHIRES, F. N., 1897, III.
SHIRES, G. M., 1897, III, City Boiler and Elevator Inspector, City Hall, Houston.
SHIRLEY, A. L., 1884, I, Farmer and Merchant, Anna.
*SHIRLEY, M. W., 1889, III.
SHIRLEY, W. M., 1889, IV, County Treasurer, Collin County, McKinney.
*SHIRLEY, Z. M., 1888, III.
SHORT, A. K., 1900, I, Superintendent of Experiment Station, Temple.
SHORT, J. L., 1893, I, Physician and Surgeon, 300-301 Kiam Bldg., Houston.
SHROPSHIRE, L. O., 1912, V, Plainview.
*SIGEL, R. C., 1909, III.
SIMON, R. B., 1913,/V, with Western Elec. Co., Hawthorn, Chicago.
SIMPSON, J. H., 1901, IV, Deck Officer U. S. Bache Fijardo, Porto Rico.
SIMPSON, O. M., 1900, IV, Hardware, Callehan & Simpson, Jacksboro.
SIMPSON, S. H., 1909, IV, Cashier Simpson Bank, Columbus.
SINGLETARY, J. N., 1910, I, Instructor in Science, Longview High School, Longview.
SKAGGS, G. E., 1908, V, Assistant Engineer Bell Tel. Co., St. Louis, Mo.
SKEELER, F. J., 1910, V, Instructor in Physics, College Station.
SLEEPER, W. M., 1879, III, Lawyer, 714 N. 12th St., Waco.
*SLOSS, A. M., 1899, I.
SMITH, A. J., 1908, I, Farmer, Port Sullivan.
SMITH, A. U., 1895, III, Texas Blueprint Co., Dallas.
SMITH, E. J., 1888, I, Attorney at Law, Denison.
SMITH, E. W., 1910, IV, Denison.
SMITH, G. A., 1909, V, Bermuda.
SMITH, T. L., JR., 1898, IV, Civil Engineer and Surveyor, Eagle Lake.
SMITH, T. M., 1901, I, Bookkeeper, Columbia.
SMITHER, R., 1894, III, Merchant, Duke.
*SMYTHE, H. G., 1879.
SNEARLEY, C. L., 1911, V, Electrician Automatic Elec. Co., Chicago, Ill.
SNEED, G. L., 1898, I, Minister, Station A, Dallas.
SOLES, C. B., 1899, III, Machinist I. & G. N. Shops, Palestine.
SORY, E. G., 1912, IV, Draftsman M. K. & T. Ry., Dallas.
SOUTHER, S. C., 1912, I, Farmer, Rosebud.
*SPANN, E. W., 1885, III.
SPEER, R. H., 1894, IV, Stockman, Quanah.
SPENCE, E. V., 1911, IV, Medina Irrigation Co., Rio Medina.
SPENCE, T. R., 1913, IV, Assistant County Engineer, Waco.
SPENCER, W. W., 1911, III, Clerk Commonwealth National Bank, Dallas.
SPIVEY, M. C., 1908, IV, Civil Engineer, care City Engineer, Houston.
STALLCUP, J. F., 1904, IV, with H. & T. C., 1513 Wash. Ave., Houston.
STANDIFER, R. H., 1908, IV, City Engineering Department, Fort Worth.
STAPP, W. E., 1904, IV, Conroe.
STERNBERG, E. H., 1897, IV, County Superintendent of Public Instruction, Bellville.
STEVENS, D. T., 1913, I, Bryan.
STERNENBERG, PAUL, 1905, III, Superintendent Steel Works, 2228 Chapel St. Berkeley, Cal.
STERNS, J. B., 1903, Civil Engineer Nona Mills Co., Leesville, La.
STEVENS, R. R., 1910, IV, Engineer C., M. & S. P. Ry., Minneapolis, Minn., Home Address, Clarendon.
STEWARD, W. W., 1888, III, Civil Engineer for Freestone Co., Steward's Mill.
STEWART, J. E., 1912, IV, Civil Engineer, Corpus Christi.
STIMSON, O. E., 1910, IV, Houston.
STINSON, V. L., 1904, IV, Civil Engineer and County Surveyor, Durant, Okla.
STONE, J. M., 1913, I, Houston.
STREET, GUS C., JR., 1905, I, Contractor, Houston.
STRIEBER, C. A., 1902, III, Machinist I. & G. N. Shops, 215 Trinity St., Palestine.
STUBBS, VAN HOOK, 1905, I, Banker, Wortham.
SVASTA, S. F., 1910, V, Telephone Engineer, 400 E. 61st St., Chicago, Ill.
SWAIN, M. S., 1888, II, Houston.
TABER, R. G., 1910, IV, Engineer S. & W. E. Co., Dallas.
TABOR, J. R., 1906, VII, Architect, Houston.
TALBOT, A., 1882, III, Planter, Calvert.
TARVER, T. C., JR., 1904, IV, Civil Engineer, 816 Clement St., Houston.
TAYLOR, A. B., 1913, I, Burnet.
TAYLOR, L. T., 1912, IV, Rodman G. C. & S. F. Ry. Co., Crawford.
TAYLOR, M., 1911, V, Eng. S. W. Tel. & Tel. Co., Fort Worth.
TELFAIR, W. H., 1909, V, Ennis.
TEMPLETON, B. O., 1912, V, Western Elec. Co., Cicero, Ill.
TERRY, L. H., 1911, VIII, Chemist Oklahoma Cotton Oil Co., Oklahoma City, Okla.
THALMANN, C. H., 1911, III, Ranch Manager, Bandera.
THANHEISER, C. A., 1901, IV, Engineer M. of W., M., K. & T. Lines, Dallas.
THANHEISER, L. O., 1911, V, San Antonio Gas and Electric Co., San Antonio.
THARP, P., 1910, IV, Attorney at Law, Stewart Bldg., Houston.
THAXTON, HAROLD, 1912, I, Mason.
THOMAS, J. B., 1911, III, Dallas Elec. Co., Dallas.
THOMAS, M. F., 1901, III, Instructor and Graduate Student Cornell University, Ithaca, N. Y.
THOMPSON, C. B., 1907, III, Milling Engineer, 917 S. Alamedo St., Los Angeles, Cal.
THOMPSON, T. E., 1910, IV, Medina Irrigation Co., Lytle.
THOMSON, J. M., 1913, I, Florence.
THROWER, J. D., 1900, I, U. S. Department of Agriculture, Kansas City, Mo.

TIGNER, J. B., 1913, VI, Duke.
TILSON, M. D., 1886, III, Manufacturer and Merchant, Texarkana.
TILSON, P. S., 1888, I, M. S., 1894, Director Houston Laboratories, 215 1-2 Main St., Houston.
TILSON, W. H., 1903, IV, City Engineer, Plainview.
TODD, A. M., 1894, IV, U. S. Assistant Engineer, P. O. Box 404, Vicksburg, Miss.
TODD, CHAS. C., 1897, II, Attorney at Law, San Antonio.
TODD, D. H. B., 1911, V, Commandant C. M. A., Whitewright.
TOLBERT, W. S., 1913, I, Miami.
TORRENCE, W. C., 1913, III, Waco.
TRACY, H. H., IV, Hardware, Tulia.
TREADAWAY, S. J., 1907, IV, R. R. Cons. Works, El Granada, Cal.
TRENCKMANN, R., 1907, III, Fairbanks, Morse & Co., Beloit, Wis.
TRENCKMANN, W. A., 1878, Newspaper Publisher, Austin.
TRICKEY, W. W., 1911, IV, with C. B. Roulet, Civil Engineer, Dallas.
TRIGG, K. M., 1911, I, Stock Farmer, Bastrop.
TUCKER, D. H., 1913, V, Missouri City.
*TULLER, W. L., 1883, III.
UECKERT, H. H., 1897, IV, Draftsman M. of W. Department, Sunset Route, Houston.
UNDERWOOD, A., 1907, IV, Civil Engineer, Houston.
UNDERWOOD, HARRIS, 1912, IV, Stock Raising, La Porte.
VAN AMBURG, T. A., 1909, IV, with Cotton Belt Ry., Dexter, Mo.
VAN ZANDT, K. M., JR., 1879, Vice-President and Manager Mercantile Banking Co., No. 12 Avenida, San Francisco, Mexico.
VAN ZANDT, R. L., 1890, IV, National Bank Examiner, Fort Worth.
VICK, JNO. C., 1904, III, Miller, Bryan.
VINTHER, F., 1897, III, Machinist and Draftsman, 602 W. 15th Ave., Pine Bluff, Ark.
VOELCKER, H. R., 1909, VII, Heating and Ventilating Engineer, Kansas City, Mo.
VON ROSENBERG, F. C., 1884, III, Attorney at Law, Austin.
WALDEN, W. J., 1900, I, M. S., 1903, Attorney at Law, 710 Crawford St., Houston.
WALKER, P. W., 1913, V, Gonzales.
WALKER, R. R., 1911, V, General Electric Co., Pittsfield, Pa.
WALKER, W. T., 1906, VI, Farming, San Saba.
WALLACE, L. W., 1903, III, Instructor in Car and Locomotive Design; Purdue University, West Lafayette, Ind.
WALLIS, J. W., 1909, V, 1st Lieutenant Coast Artillery, Fort Fladger, Wash.
WALLIS, T. T., 1913, I, Cuero.
WALZEM, L. F., 1913, III, New Braunfels.
WANGEMANN, A. E., 1890, I, Wholesale Grocer, Brenham.
WARD, A. L., 1910, I, Manager Oak Knoll Farm, Hagerman.
WARDEN, J. A., 1908, IV, 2nd Lieutenant U. S. Army, Fort Sam Houston, San Antonio.
WARDEN, T. B., 1903, IV, U. S. Engineer's Office, Dallas.
WASHBURN, H. A., 1906, IV, Draftsman, S. P. R. R., Houston.
WASHBURN, JOHN E., 1905, III, Assistant Master Mechanic National Carbon Co., Cleveland, Ohio.
WASHBURN, W. W., 1908, IV, Bridge Engineer, Houston.
WASHINGTON, W. C., 1912, V, 2nd Lieutenant U. S. Army, Fort Crockett, Galveston.
WATERS, J. J., JR., 1913, IV, San Antonio.
WATKINS, H. B., 1912, IV, Bowie.
WATKINS, R. C., 1895, IV, Superintendent G. H. & S. A., San Antonio.
WATKINS, W. A., 1892, IV, New Orleans, La.
*WATSON, D. H., 1882, III.
WATSON, W. D., 1893, I, Clerk, Markham.
WEATHERBY, E. P., 1903, III, Signal Engineer T. & P. Ry., Dallas.
WEBB, THOMAS C., 1905, IV, 927 Franklin St., Waco.
WEIDEL, J., 1893, IV, Engineer of Construction P. & N. T. Ry., Lubbock.
WEINERT, H. G. H., 1913, I, Geronimo.
WEINERT, M. H., 1909, V, Principal State Juvenile School, Gatesville.
WELBOAN, J. S., 1906, I, Cashier Citizens State Bank, Alvin.
WELBORN, G. M., 1912, V, Palestine.
WELHAUSEN, C. B., 1891, III, Merchant, Shiner.
WELHAUSEN, P. H., 1905, III, Assistant Cashier First National Bank, Shiner.
WELLS, D. D., 1895, I, Physician, 18 San Diego, Acapulco, Mexico.
WENDTLAND, W. A., 1912, III, Merchant, Shiner.
*WESSEN, J. M., 1883, III.
WESSENDORF, J. A., 1907, VI, Bookkeeper and Assistant Manager for J. A. Wessendorf, Richmond.
WEST, T. B., 1887, III, Agent G., H. & S. A. Ry., Columbus.
WHELAN, J. J., 1891, III, Machinist, H. & T. C. Ry., Houston.
WHEAT G. N., 1897, IV, Rock Springs.
WHEELER, A. C., 1905, I, Ranchman, Sue.
WHISENANT, W. H., 1899, II, Pharmacist, 117 E. Houston St., San Antonio.
WHITAKER, W., 1885, III, Oil Producer, Texarkana.
WHITE, G. R., 1895, IV, Stockman, Brady.
WHITE, T. F., 1913, I, Lott.
WHITENER, H. L., 1891, I, Physician, 2009 E. Grand Ave., St. Louis, Mo.
WHITESIDE, B., 1913, IV, Lott.
WHITFIELD, C. A., 1913, I, San Angelo.
WHITLOCK, E. H., 1886, III, Assistant Factory Manager National Carbon Works, Cleveland, Ohio.
WHITTET, A. B., 1908, III, Ordnance Office, War Department, Washington, D. C.
WHITTET, H. E., 1909, V, Anchorage.
WHITTLE, C. T., 1899, III, Mining, Craig and 18th Sts., Pueblo, Colo.
WICKES, H. G., 1912, I, Stockman, Wheelock.
WIGHT, A. T., 1895, IV, General Merchandise, Roxton.
WIGNALL, C. L., 1909, VII, Architect, Port Arthur.
WILLIAMS, I. L., 1903, III, Foreman of Construction Signal Department Sunset Lines, Houston.

WILLIAMS, L. D., 1897, IV, Bookkeeper Austin National Bank, Austin.
WILLIAMS, J. S., 1909, I, Farmer, Benton, Miss.
WILLIAMS, R. S., 1910, V, Eck Dynamo and Motor Co., Newark, N. J.
WILLIAMS, T. S., 1911, III, Draftsman, Milwaukee, Wis., Home Address, Cuero.
WILLIAMSON, H. H., 1911, I, Assistant in Extension Department, College Station.
WILLIFORD, C. L., 1911, III, Draftsman City Engineer's Office, Houston.
WILSON, ASHLEY F., 1905, IV, Instructor Cornell University, Ithaca, N. Y.
WILSON, A. G., 1912, IV, Surveyor, McKinney.
WILSON, W., 1893, IV, Attorney at Law and County Judge, Calhoun County, Port Lavaca.
WINDROW, R. J., 1906, IV, 1913, C. E., County Engineer, Waco.
WINKLER, A., 1900, I, Farmer, The Grove.
WIPPRECHT, W., 1884, I, B. S. A., 1899, Manager of the Bryan Press Co. and Tax Collector, Brazos County, Bryan.
WISDOM, F. L., 1896, IV, Bookkeeper for Frost-Johnson Lumber Co., Shreveport, La.
WISE, W. F., 1909, IV, M., L. & T. R. R., Lafayette, La.
WOOD, E. G., 1911, IV, with Texas Bitulithic Co., Waco.
WOOD, W. M., 1888, IV, Assistant Disbursing Officer, I. C. Commission, Empire, Canal Zone.
WOODALL, HOWARD, 1905, III, Clerk P. O. Service, San Marcos.
WOODS, H. A., 1911, IV, Newton.
WOODS, HENRY S., 1905, V, E. E., 1907, Sales Agent General Electric Co., Kansas City, Mo.
WOODWARD, W. F., 1886, III, Banker, Denton.
WORTHING, E. E., 1903, III, Signal Supervisor Sunset-Central Lines, Houston.
WRAY, JAY, 1908, V, Centre Point.
WRIGHT, A. A., 1906, I, Stockman, Alfred.
WRIGHT, B. F., 1911, V, Merchant, Waco.
WRIGHT, H. L., 1886, III, Secretary Rio Grande Fire Insurance Co., San Antonio.
WURTZBACH, W. A., 1888, IV, Lawyer, San Antonio.
WYCHE, T. S., 1910, V, Superintendent Hydro. Elec. Station, Victor, Colo.
WYSE, IRA O., 1901, I, Dallas.
WYSE, J. T., JR., 1905, I, Traveling Salesman Texas Oil Co., Greenville.
YAKEY, H. G., 1906, I, Farmer, Taylor.
YARBROUGH, R. W., 1901, III, Merchant and Planter, Red River Parish, Greening, La.
YOUNG, M. H., 1907, VI, Farmer, Primm.
YOUNG, M. H., 1913, I, Montgomery.
YOUNGBLOOD, B., 1902, I, M. S., 1907, Director of Texas Agricultural Experiment Station, College Station.
YOUNGBLOOD, TOM, 1912, I, Demonstration Agent, Belton.

NUMBER OF GRADUATES BY CLASSES.

Class of 1878	2	Class of 1896	22
Class of 1879	23	Class of 1897	27
Class of 1880	7	Class of 1898	23
Class of 1881	1	Class of 1899	22
Class of 1882	12	Class of 1900	26
Class of 1883	8	Class of 1901	19
Class of 1884	14	Class of 1902	27
Class of 1885	10	Class of 1903	36
Class of 1886	11	Class of 1904	36
Class of 1887	10	Class of 1905	39
Class of 1888	17	Class of 1906	46
Class of 1889	19	Class of 1907	45
Class of 1890	14	Class of 1908	49
Class of 1891	16	Class of 1909	47
Class of 1892	25	Class of 1910	69
Class of 1893	15	Class of 1911	98
Class of 1894	31	Class of 1912	98
Class of 1895	27	Class of 1913	114

	1105
Counted twice	8
Total graduates	1097
Deceased	52
	1045

APPENDIX A

SPECIMEN ENTRANCE EXAMINATIONS.

For Admission to the Freshman Class.

Special attention is called to the following specimen entrance examinations. Young men intending to apply for admission are urged to satisfy themselves by actual trial before coming to College that they can answer such questions.

Algebra.

1. Factor: x^3+y^3, x^6-y^6, $x^2+5x-24$.
2. Simplify: $\left(\frac{a}{a-b}+\frac{a^2+b^2}{a^2-b^2}\right) \div \left(\frac{a-b}{a+b}-\frac{a^3-b^3}{a^3+b^3}\right)$
3. Given: $\frac{x-y}{4}-\frac{2x-y-1}{3}=\frac{2y-2}{5}$ and $\frac{2y+x-1}{9}=\frac{x+y}{4}$, find the values of x and y.
4. Find the square root of $10x^2-4x^3+9-12x+x^4$.
5. Simplify: $3a^2\times a^{\frac{1}{3}}$, $6a^2\div 3a^5$, $(a^2)^7$.
6. Reduce $\frac{3\sqrt{2}+2\sqrt{2}}{3\sqrt{5}-2\sqrt{2}}$ to an equivalent fraction having a rational denominator.
7. Solve: $\sqrt{x+6}+\sqrt{x+3}=3$.
8. Solve: $7-12x^2=17x$.
9. Determine by inspection the sum of the roots of $8x^2+13x-82=0$.

Geometry.

1. Only one perpendicular can be drawn to a given line from a given external point.

2. Two triangles are equal if two sides and the included angle of the one are equal, respectively, to two sides and the included angle of the other.

3. Two angles whose sides are penpendicular, each to each, are either equal or supplementary.

4. In the same circle, or in equal circles, equal chords are equally distant from the center.

5. An inscribed angle is measured by half the arc intercepted between its sides.

6. In a triangle ABC, AB=12, AC=14, BC=13. Find the segments of BC made by the bisector of the angle A.

7. Find the area of an equilateral triangle, if one side equals 8 feet.

8. The area of a circle is equal to half the product of its radius by its circumference.

Grammar.

"'*A clear* fire, a clean *hearth, and* the rigour *of* the game.' *This was* the *celebrated* wish of old Sarah Battle (*now* with God), *who,* next to *her* devotions, *loved* a good game at whist, * * * *
* * * * * * * * * *
* * * She sat *bolt* upright; and *neither* showed you her cards, nor desired to see *yours.* All people have their blind side—their superstitions; and I have *heard* her *declare,* under the rose, that Hearts was her favorite suit."

1. What parts of speech are the italicized words?
2. What is the grammatical function of each of the underscored words and expressions.
3. Point out the antecedent of each pronoun in the passage.
4. What is the difference between a phrase and a clause?
5. Classify the clauses in this passage from both the standpoint of form and the standpoint of function.
6. What is the difference in grammatical function between "side" and "that Hearts was her favourite suit"? Between "clean" and "who loved a game at whist"?
7. Account for the punctuation of the passage.
8. What do you understand by the grammatical terms: Case, Gender, Number, Person, Mood, Voice and Tense?

Composition.

1. Write a theme containing 300 words on the following subject: *The Most Exciting Incident in My Life.* Pay special attention to *clear* and forceful expression.
2. Write a letter to a friend, telling of your trip to college, and your first impressions of college life.

History.

1. Name the European nations that acquired colonial possessions within the present limits of United States, and locate their several claims.
2. What territory formed the original United States?
3. Give a brief account of the French and Indian war, stating the causes and results.
4. Name the important campaigns of the Revolutionary War, and write a short account of one of them.
5. Name an important event connected with the life of each of the following persons: Hamilton, Jefferson, Jackson, Calhoun and Webster.
6. What is the Monroe Doctrine, and what were the circumstances of its first announcement?
7. What was the Missouri Compromise?
8. Name five American inventors, and give the name of an invention made by each.
9. State the cause, name two of the principal battles, and give the result of the Mexican War.
10. Give a short history of the differences between President Johnson and Congress.

11. Name and discuss briefly the three leading religions of China.
12. Name the services that the Hebrews have rendered civilization.
13. Compare and contrast the characters of David and Solomon.
14. Who was the father of history? The last of the Pharaohs?
15. Give a brief account of the Trojan War.
16. Give an account of the early growth of Athens and Sparta.
17. Name the Punic Wars, and give the causes of each.
18. Who composed the first and second triumvirates?
19. Tell about the persecution of the Christians during the reign of Nero.
20. Tell about the capture and destruction of Jerusalem by Titus during Vespasian's reign.

For Admission to the two Year Courses.

Algebra.

1. Multiply $2a^2-3ab+5b^2$ by $2a^2+3ab-5b^2$.
2. Divide $21a^6b+20b^4-22a^2b^3-29a^4b^2$ by $3a^2b-5b^2$.
3. Factor: x^3+y^3, x^4-y^4 and $x^2-23x-24$.
4. Find the highest common factor of x^2-9 and x^2+3x.
5. Find the lowest common multiple of $x^2+3x-10$ and $x^2-3x-40$.
6. Simplify: $\frac{x-1}{2}-\frac{x-2}{3}+\frac{x+7}{6}$
7. Simplify: $\frac{8a^2}{a^2-b^2}\times\frac{a+6}{2a}$
8. Solve: $\frac{5x}{x+3}-\frac{9}{x-2}=5.$

Grammar and Composition.

1. (a) What is a sentence?
    (b) Explain how sentences are divided according to use and form. Give examples.
2. (a) Show clearly the difference between a phrase and a clause.
    (b) What is the difference between an independent and a dependent clause?
3. Define the following grammatical terms: gender, case, voice, mode, and tense.
4. (a) What is conjugation of verbs?
    (b) Give synopsis of the conjugation of the verb "choose" in active voice, indicative mode.
5. In the following selection, (a) analyze the sentences; (b) parse the nouns and verbs:

    Consider what you have in the smallest chosen library. A company of the wisest and wittiest men of all civilized countries have set in order the results of their learning and wisdom.
6. Write a 200-word composition on the following subject:

    "My Early School Days."

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BULLETIN

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

Third Series, Vol. 1 JUNE, 1915 No. 6

THIRTY-NINTH

ANNUAL CATALOGUE

SESSION 1914-15

Published monthly by the Agricultural and Mechanical College
of Texas

Entered as second class matter August 7, 1913, at the postoffice at College Station, Texas,
under the Act of August 24, 1912.

A80-415-5m

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VON BOECKMANN-JONES CO., PRINTERS, AUSTIN, TEXAS
1915

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CALENDAR

1915

JULY

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AUGUST

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1917

JANUARY

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FEBRUARY

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COLLEGE CALENDAR.

1915.

Deficiency Examinations, Monday, Tuesday, September 20, 21.
First term begins Tuesday, September 21.
Opening exercises, Assembly Hall, September 21, 8 a. m.
Registration of students, September 21, 22, 23.
Entrance Examinations, September 22, 23.
Recitations begin September 24.
National Holiday, Thanksgiving Day.
Christmas Holidays begin December 23.

1916.

Last Day of the Christmas Holidays, Sunday, January 3.
Recitations resumed, Monday, January 4, 8 a. m.
Short Winter Course in Highway Engineering begins Wednesday, January 12.
Registration for Second Term, March 31, February 1, 2, 3.
Second Term begins Thursday, February 3.
National Holiday, February 22.
State Holiday, March 2.
State Holiday, April 21.
Commencement Sermon, Sunday, June 11.
Exhibition of Departments and of Work of Students, June 12.
Commencement Day, June 13.

BOARD OF DIRECTORS.

JOHN I. GUION, PRESIDENT.
L. J. HART, VICE-PRESIDENT.

TERMS EXPIRE 1917.

T. E. BATTLE	*Marlin.*
H. A. BREIHAN	*Bartlett.*
J. SHEB WILLIAMS	*Paris.*

TERMS EXPIRE 1919.

E. H. ASTIN	*Bryan.*
JOHN I. GUION	*Ballinger.*
L. J. HART	*San Antonio*

TERMS EXPIRE 1921.

A. B. DAVIDSON	*Cuero.*
J. R. KUBENA	*Fayetteville.*
W. A. MILLER	*Amarillo.*

TERMS EXPIRED 1915.

E. B. CUSHING	*Houston.*
J. ALLEN KYLE	*Houston.*
WALTON PETEET	*Waco.*

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President.

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Dean of the College.

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Director of the Agricultural Experiment Station.

EDWIN JACKSON KYLE, M. S. A.,
Dean of the School of Agriculture.

DAVID WENDEL SPENCE, C. E.,
Dean of the School of Engineering.
Director of the Engineering Experiment Station.

CLARENCE OUSLEY,
Director of the Extension Service.

JAMES R. HILL, Second Lieutenant, Cavalry, U. S. A.,
Commandant of Cadets.

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State Chemist.

WILMON NEWELL, M. S.,
State Entomologist.

OTTO EHLINGER, Ph. G., M. D.,
Surgeon.

WALTER WIPPRECHT, B. S. A.
Business Manager.

A. C. LOVE, B. S.,
Superintendent of Buildings and Grounds.

CHARLES E. FRILEY,
Registrar.

*S. A. KRUSE, B. S., A. M.,
Librarian.

---

*Absent on leave.

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President.

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Professor of Mathematics.

M. FRANCIS, D. V. M.,
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D. W. SPENCE, C. E.,
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E. J. KYLE, M. S. A.,
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Professor of Horticulture.

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Commandant of Cadets.

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R. F. SMITH,
Associate Professor of Mathematics.

OTHER OFFICERS OF INSTRUCTION.

R. P. MARSTELLAR, D. V. M.,
Associate Professor of Veterinary Science.

J. J. RICHEY, C. E.,
Associate Professor of Civil Engineering.

A. C. LOVE, B. S.,
Associate Professor of Civil Engineering.

W. H. THOMAS, B. Lit.,
Associate Professor of English.

A. T. POTTS, B. S.,
Associate Professor of Horticulture.

E. C. GEE, B. S.,
Associate Professor of Agricultural Engineering.

J. D. BLACKWELL, B. Pd., B. S. A.,
Associate Professor of Agricultural Education.

J. H. CANNON, B. S.,
Associate Professor of Electrical Engineering.

B. K. COGHLAN, B. S.,
Associate Professor of Highway Engineering.

S. A. McMILLAN, B. S.,
Associate Professor of Agronomy.

F. W. BELL, B. S. A.,
Associate Professor of Animal Husbandry.

L. B. BURK, B. S. A.,
Associate Professor of Animal Husbandry.

J. C. OLSEN, B. S.,
Associate Professor of Farm Terracing.

J. W. MITCHELL, B. A.,
Assistant Professor of Mathematics.

J. N. MICHIE, B. A., B. S.,
Assistant Professor of Mathematics.

C. S. TATUM, B. S.,
Assistant Professor of Textile Engineering.

J. D. GARNER, A. M., LL. B.,
Assistant Professor of Mathematics.

H. E. HAYDEN, M. A.,
Assistant Professor of Biology.

O. B. WOOTEN, B. S.,
Assistant Professor of Electrical Engineering.

G. A. GEIST, B. S.,
Assistant Professor of Drawing.

W. P. NELSON, JR.,
Assistant Professor of Chemistry.

H. B. GORDON, M. S., Ph. D.,
Assistant Professor of Chemistry.

D. C. JONES, B. A.,
Assistant Professor of Mathematics.

I. C. NICHOLS, M. A., M. S.,
Assistant Professor of Mathematics.

R. G. BRESSLER, M. A.,
Assistant Professor of English.

W. H. McPHEETERS, B. S.,
Assistant Professor of Physics.

D. B. COFER, A. B.,
Assistant Professor of English.

F. J. SKEELER, B. S.,
Assistant Professor of Physics.

C. A. WOOD, B. S. A.,
Assistant Professor of Agronomy.

F. HENSEL, M. S.,
Assistant Professor of Horticulture.

D. C. MILLER, C. E.,
Assistant Professor of Civil Engineering.

J. A. HERRINGTON, B. S.,
Instructor in Mechanical Engineering.

L. L. CHAPPELLE,
Instructor in Mechanical Engineering.

H. CASSIDAY, A. M.,
Instructor in Biology.

J. D. BOND, B. A.,
Instructor in Mathematics.

P. G. GUNTER, M. A.,
Instructor in English.

F. W. REDLICH, B. S.,
Instructor in Drawing.

R. C. DUNN, D. V. M.,
Instructor in Veterinary Science.

E. E. McADAMS, B. S.,
Instructor in Physics.

F. J. BECHERT, M. E., Ch. E.,
Instructor in Mechanical Engineering.

L. L. CLICK, B. S. E.,
Instructor in English.

E. L. REED, A. B.,
Instructor in Biology.

S. W. BILSING, B. S., M. A.,
Instructor in Entomology.

G. P. WILSON, A. B.,
Instructor in English.

J. E. ABSHIRE, A. M.,
Instructor in History.

J. A. CLUTTER, B. S.,
Instructor in Dairy Husbandry.

E. F. BATES, M. S.,
Instructor in Physics.

M. K. THORNTON, JR., A. M.,
Instructor in Chemistry.

C. E. HANSON, A. B., B. S.,
Instructor in Mechanical Engineering.

G. W. HANSON, B. S.,
Instructor in Mechanical Engineering.

ALLAN BURTON, B. S.,
Instructor in Drawing.

I. E. COWART, M. S.,
Instructor in Horticulture.

J. H. EHLERS, A. B., Ph. D.,
Instructor in Biology.

GLEN H. MULLIN, A. B.,
Instructor in English.

M. H. YOUNG, B. S.,
Instructor in Agronomy.

ROBIN BEACH, B. S.,
Instructor in Electrical Engineering.

A. E. PARMELEE, B. S.,
Instructor in Chemistry.

C. G. MARTINSON, B. S.,
Instructor in Mechanical Engineering.

W. T. MAGEE, B. S. A.,
Instructor in Animal Husbandry.

B. W. BITTLE, A. M.,
Instructor in English.

F. W. KAZMEIER,
Instructor in Poultry Husbandry.

W. T. BRYANT, Ch. E.,
Assistant in Chemistry.

A. L. DARNELL, B. S.,
Assistant in Dairy Husbandry.

D. P. SOUTH,
Assistant in Electrical Engineering.

M. T. GARRETT,
Student Assistant in Agronomy.

J. D. McIVER,
Student Assistant in Agricultural Engineering.

OTHER OFFICERS OF THE COLLEGE.

B. SBISA,
Supervisor of Subsistence Department.

S. G. BAILEY,
Secretary to the President.

*C. B. MORAN,
Physical Director.

F. D. STEGER,
Secretary, Young Men's Christian Association.

MRS. W. H. THOMAS,
Acting Librarian.

J. M. KENNEY, Quartermaster-Sergeant, U. S. A., Retired.
GEORGE SMART, First Sergeant, U. S. A., Retired.
J. C. HYLAND, Ordnance Sergeant, U. S. A., Retired.
Assistant Commandants.

IKE S. ASHBURN,
Publicity Agent,
Secretary to the Board of Directors.

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*Resigned December, 1914.

TEXAS AGRICULTURAL EXPERIMENT STATION.

Main Station, College Station.

PERSONNEL OF THE STAFF.

ADMINISTRATION:

B. YOUNGBLOOD, M. S., *Director.*
A. B. CONNER, B. S., *Assistant Director.*
CHAS. A. FELKER, *Chief Clerk.*
A. S. WARE, *Secretary.*

DIVISION OF VETERINARY SCIENCE:

M. FRANCIS, D. V. M., *Veterinarian in Charge.*
H. SCHMIDT, D. V. S., *Assistant Veterinarian.*

DIVISION OF CHEMISTRY:

G. S. FRAPS, Ph. D., *Chemist in Charge.*
J. W. CHEWNING, B. S., *Assistant Chemist.*
R. H. RIDGELL, B. S., *Assistant Chemist.*
FRANK HODGES, B. S., *Assistant Chemist.*

DIVISION OF HORTICULTURE:

H. NESS, M. S., *Horticulturist in Charge.*
W. S. HOTCHKISS, Horticulturist.

DIVISION OF ANIMAL HUSBANDRY:

J. C. BURNS, B. S., *Animal Husbandman, Feeding Investigations.*
J. M. JONES, M. S., *Animal Husbandman, Breeding Investigations.*

DIVISION OF ENTOMOLOGY:

WILMON NEWELL, M. S., *Entomologist in Charge.*
F. B. PADDOCK, B. S. E., *Entomologist.*

DIVISION OF AGRONOMY:

A. B. CONNER, B. S., *Agronomist in Charge.*
A. H. LEIDIGH, B. S., *Agronomist in Charge of Soil Improvement.*
H. H. JOBSON, B. S., *Assistant Agronomist.*

DIVISION OF PLANT PATHOLOGY AND PHYSIOLOGY:

F. H. BLODGETT, Ph. D., *Plant Pathologist and Physiologist in Charge.*

DIVISION OF FARM MANAGEMENT:

(In co-operation with the United States Department of Agriculture.)
REX E. WILLARD, M. S., *Farm Management Expert in Charge, Brownsville.*

DIVISION OF POULTRY HUSBANDRY:

T. J. CONWAY, B. S., *Poultryman in Charge.*

DIVISION OF FEED CONTROL SERVICE:

*W. L. BOYETT, *State Feed Inspector.*
J. H. ROGERS, *Deputy Feed Inspector.*
W. H. WOOD, *Deputy Feed Inspector.*
T. H. WOLTERS, *Deputy Feed Inspector.*
S. D. PEARCE, *Deputy Feed Inspector.*
J. M. SCHAEDEL, *Deputy Feed Inspector.*
W. M. WICKES, *Deputy Feed Inspector.*
CHAS. A. FELKER, *Chief Clerk.*
JAMES SULLIVAN, *Secretary.*

Resigned May 15, 1915.

SUB-STATION NO. 1, Beeville, Bee County:
E. E. BINFORD, B. S., *Superintendent.*

SUB-STATION NO. 2, Troup, Smith County:
W. S. HOTCHKISS, *Superintendent.*

SUB-STATION NO. 3, Angleton, Brazoria County:
N. E. WINTERS, B. S., *Superintendent.*

SUB-STATION NO. 4, Beaumont, Jefferson County:
(In co-operation with the United States Department of Agriculture.)
H. H. LAUDE, B. S., *Superintendent.*

SUB-STATION NO. 5, Temple, Bell County:
A. K. SHORT, B. S., *Superintendent.*

SUB-STATION No. 6, Denton, Denton County:
T. W. BUELL, B. S., *Superintendent.*

SUB-STATION NO. 7, Spur, Dickens County:
R. E. DICKSON, B. S., *Superintendent.*

SUB-STATION NO. 8, Lubbock, Lubbock County:
V. L. CORY, B. S., *Superintendent.*

SUB-STATION NO. 9, Pecos, Reeves County.
J. W. JACKSON, B. S., *Acting Superintendent.*

SUB-STATION NO. 10, (Feeding and Breeding Sub-Station), College Station, Brazos County:
T. M. REDDELL, *Superintendent.*

SUB-STATION NO. 11, Nacogdoches, Nacogdoches County:
G. T. McNESS, *Superintendent.*

TEXAS ENGINEERING EXPERIMENT STATION.

D. W. SPENCE,
Dean of Engineering,
Director.

ADVISORY COUNCIL.

R. ADELSPERGER, B. A., B. S.,
Professor of Architecture and Architectural Engineering.

C. C. HEDGES, A. B., Ph. D.
Professor of Chemistry and Chemical Engineering.

T. L. KIBLER, M. A., Ph. D.
Professor of Economics.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

R. L. MORRISON, M. A.,
Professor of Highway Engineering.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

W. T. WRIGHT, B. S., A. B.,
Professor of Physics.

H. E. SMITH, M. E.,
Professor of Steam Engineering.

J. B. BAGLEY, B. A.,
Professor of Textile Engineering.

EXTENSION SERVICE.

(In co-operation with the United States Department of Agriculture.)

CLARENCE OUSLEY,
Director.

W. F. PROCTOR,
State Agent in Demonstration Work.

SETH B. HOLMAN,
General Secretary.

STATE STAFF.

H. M. ELIOT,
Advisor in Rural Economics.

S. G. RUBINOW,
Secretary of Correspondence Courses.

R. L. BENNETT, Paris,
Advisor in Crop Credits.

WALTON PETEET, Waco,
Farm Reporter.

R. M. HARKEY,
H. L. McKNIGHT, Bryan,
Field Organizers.

C. M. EVANS, Bryan,
Advisor in Animal Husbandry.

MRS. NAT. P. JACKSON,
Organizer of Rural Women.

MISS CORNELIA SIMPSON,
Demonstrator in Home Economics.

FEDERAL STAFF.

MISS BERNICE CARTER,
State Agent in Home Demonstration Work.

H. H. WILLIAMSON,
State Agent in Club Work.

J. L. QUICKSALL, Waco,
T. O. WALTON, Livingston,
M. T. PAYNE, San Antonio,
WILLIAM GANZER, Denton,
G. W. ORMS, Mineola,
E. GENTRY, Mineola,
District Demonstration Agents.

J. L. THOMAS,
Specialist in Dairying and Creamery.

W. H. G. LAMPE,
Demonstrator in Hog Cholera Prevention.

GEORGE D. MARSHALL,
Advisor in Rural Highways.

FERTILIZER CONTROL SERVICE.

G. S. FRAPS, Ph. D.,
State Chemist.

S. E. ASBURY, M. S.,
Assistant State Chemist.

T. L. OGIER, B. S.,
L. A. HUDGINS, B. S.,
G. W. ROARK, B. S.,
E. R. GILMORE, B. S.,
A. J. WEAVER, E. M.,
W. T. P. SPROTT, B. S.,
Assistant Chemists.

OFFICE OF STATE ENTOMOLOGIST.

WILMON NEWELL, *State Entomologist.*
F. B. PADDOCK, *Assistant State Entomologist.*

HISTORICAL SKETCH.

The Agricultural and Mechanical College of Texas, like the land grant institutions in other States of the Union, owes its origin to an act of Congress approved July 2, 1862. This act donated public lands to the several States and Territories which might provide colleges for the benefit of agriculture and the mechanic arts, and directed the Secretary of the Interior to issue land scrip to the States in which there was not the requisite quantity of public land. The act further directed that the money derived from this source should constitute a perpetual fund, the principal of which should remain forever undiminished, and the interest of which should be inviolably appropriated by each State to the endowment, support and maintenance of at least one technological college, whose leading subject should be, without excluding other scientific and classical studies, and including military tactics, to teach branches of learning pertaining to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life. It was further provided that the provisions of the act should be formally accepted by the State Legislature. By joint resolution approved November 1, 1866, the Legislature of Texas accepted the provisions of the Congressional legislation, and accordingly there was issued to Texas scrip for 180,000 acres of public land, which was sold for $174,000. This amount was invested in Texas 7 per cent gold frontier bonds. At the time of the opening of the College there was an addition to the fund of accrued interest amounting to $35,000, which was invested in 6 per cent State bonds.

In an act approved April 17, 1871, the Legislature provided for the establishment of the Agricultural and Mechanical College. By the terms of this act and later acts, appropriations aggregating $187,000 were made for buildings and equipment. A commission to locate the College was created by the Legislature. After careful investigation, the commission accepted the proposition of the citizens of Brazos county, and located the institution on a tract of 2416 acres of land in that county. Finally, the constitutional convention of 1876 constituted the College a branch of the University of Texas, and, in accordance with the terms of the Federal legislation, designated it as an institution for instruction in agriculture and the mechanic arts and the natural sciences connected therewith. The convention further provided that the Legislature should have the right to levy taxes for the maintenance and support of the Agricultural and Mechanical College.

The College was formally opened for the reception of students October 4, 1876. By means of financial aid voted by Congress and of appropriations made by the State Legislature, there has been developed a considerable foundation at the College for instruction, for investigation, and for experiment.

The physical plant of the College now includes nine dormitories, an academic building, a Y. M. C. A. building, a mess hall, an assembly hall, an agricultural and horticultural building, a chemical and veterinary building, a civil engineering building, an electrical engineering building, an experiment station building, a mechanical engineering building, a textile engineering building, a hospital, a veterinary hospital, a farm implement building, a natatorium, a power plant, a laundry, a sewerage system, barns and outhouses, and residences for instructors and officers, with a total valuation of approximately $1,250,000.

GOVERNMENT.

The government of the College is vested in a Board of nine directors, appointed by the Governor for terms of six years.

ADMINISTRATION.

The immediate regulation and direction of the affairs of the College are delegated by the Board of Directors to the President and the Faculty.

ORGANIZATION.

The College comprises the School of Agriculture, the School of Engineering, the Agricultural Experiment Station, the Engineering Experiment Station, and the Extension Service. The Faculty of the School of Agriculture, and the Faculty of the School of Engineering have supervision over the educational work of the respective schools. The Faculty of the College directs the general policy of the institution and has supervision over matters not specifically assigned to the other Faculties. The Experiment Stations and the Extension Service are each under the supervision of a Director.

DEPARTMENTS.

The College has now in operation the following departments of instruction:

Agricultural Education.
Agricultural Engineering.
Agronomy.
Animal Husbandry.
Architecture and Architectural Engineering.
Biology.
Chemistry and Chemical Engineering.
Civil Engineering.
Dairy Husbandry.
Drawing.
Economics.
Electrical Engineering.
English.
Entomology.
History.
Horticulture.
Mathematics.
Mechanical Engineering.
Military Science and Tactics.

Modern Languages.
Physics.
Textile Engineering.
Veterinary Science.

DISCIPLINE.

By reason of its isolated location the College is able to exercise effective oversight over the student body. The authorities do not undertake to restrain the liberty of the student more than is necessary for the securing of good results in scholarship and conduct. Each student is expected at all times to conduct himself as a gentleman, and to attend promptly and faithfully to all his duties.

Students are not allowed to leave the College grounds, either to visit neighboring towns, or their homes, without first securing a furlough from the Commandant of Cadets or from the President.

When a student overstays a furlough which extends through the Christmas holidays or the summer vacation, his name will be dropped from the rolls.

The College encourages the attendance of young men who have a serious purpose and who wish to secure a thorough technological training. The Faculty will do everything in its power to assist every cadet in securing a sound education and in forming correct habits, but will not tolerate the presence of young men who evince a determination not to study and not to comply with reasonable regulations.

For improper conduct or failure to keep up with his studies, a student may at any time be required to withdraw from College.

REPORTS.

In order to keep parents systematically informed concerning the progress of their sons, reports, showing class standing and record of conduct, are sent out from the Dean's office at the end of each term.

LOCATION.

The College is situated at College Station, in the county of Brazos, and is 350 feet above sea level. The Houston & Texas Central and the International & Great Northern Railroads run through the grounds, daily trains stopping at the stations, about 650 yards from the academic building. Students and visitors are advised to take trains arriving in the daytime.

POSTOFFICE.

College Station is a money order postoffice. Letters intended for persons at the College should not be directed to Bryan. At College Station there are telegraph and express offices.

HEALTH.

The buildings of the College are situated on the crest of a wide divide, with sufficient slope in every direction to insure proper drainage. The health of the student body, as shown by the daily records of the institution, is all that could be expected at any location in the State.

The work of sanitation is carried on throughout the entire year, with especial reference to the eradication of mosquitoes, flies and other disease-bearing agencies.

Drinking water is supplied by wells varying in depth from 300 feet to 1300 feet.

The barracks are inspected daily, and are kept neat and clean throughout. The rooms are well lighted and comfortable.

Drill, shop and field practice, work and outdoor athletic sports furnish sufficient and varied exercise and contribute very much to the maintenance of health and proper physical development.

There is no endemic disease at the College; most of the sickness is the result of indiscretion on the part of the student, or is due to the introduction of some mild epidemic disease, such as measles or mumps.

HOSPITAL.

The hospital is a two-story frame structure. There are three wards with bath, toilet rooms, etc., capable of accommodating about twenty-five patients, with several small rooms for the isolation of patients suffering from any common epidemic disease, such as mumps or measles. The sick in the hospital are carefully looked after by competent trained nurses under the direction of the College Surgeon. The diet of sick students is a matter of no little concern, and great care is taken to supply such nourishment as is best adapted to the condition of each patient. Convalescent patients after leaving the hospital are given orders by the surgeon for special diet at the mess hall for such time as is found necessary.

COURSES OF STUDY.

There are eleven regular Courses, extending through four years, and leading to the degree of Bachelor of Science, the particular Course pursued being specified in the diploma; and graduate Courses and short Courses as shown below:

REGULAR COURSES.

I. Course in Agriculture.
III. Course in Mechanical Engineering.
IV. Course in Civil Engineering.
V. Course in Electrical Engineering.
VI. Course in Textile Engineering.
VII. Course in Architectural Engineering.
VIII. Course in Chemical Engineering.
IX. Course in Architecture.
X. Course in Science.
XI. Course in General Engineering.
XII. Course in Military Engineering.

GRADUATE COURSES.

(A) A graduate Course in Agriculture, leading to the degree of Master of Science in Agriculture.

(B) Graduate Courses leading to the degrees of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, Textile Engineer.

SHORT COURSES.

Two Years.

(C) Prescribed Course in Agriculture.
(D) Elective Course in Agriculture.
(E) Course in Engineering.
(F) Course for Electricians.
(G) Course for Power Plant Operators.
(H) Course in Textile Engineering.

One Year.

(L) Course in Telephony.

SUMMER COURSES.

Summer School of Cotton Classing. Six weeks.
Summer Course for Farmers. One week.

WINTER COURSE.

Course for Road Supervisors and County Surveyors.

METHOD AND SCOPE OF INSTRUCTION.

In all Courses the fundamental idea is education in practical science, particularly in agriculture and in engineering. With this idea in view, instruction is given in English, history, economics, mathematics, physics, chemistry and in other studies which lie at the foundation of a sound education and furnish the best preparation for the more technical studies of the several courses. Instruction is given by the use of textbooks, by lectures and recitations; also by practice in the shop, field, laboratory, and drawing room. These practical exercises have a high educational value, and serve a useful purpose in fixing and rendering clear the ideas presented in the class room; they have also a practical value, for they are, in great measure, examples of just such problems as the scientific agriculturist or engineer will encounter in the pursuit of his calling. For convenience of instruction, the classes are subdivided into sections of suitable size. Unannounced written exercises and tests are given at the discretion of instructors. Regular written examinations are held at the end of each term.

The military feature, made necessary by the acceptance of the Federal grants, is an important adjunct to the other work of the College. It is conducive to health and to bodily grace and strength, and cultivates habits of strict attention and of obedience, punctuality, neatness and regularity.

CURRICULA, THEORY, PRACTICE, TERM-HOUR.

The curricula shown under School of Agriculture and School of Engineering apply to the classes entering September, 1915, and thereafter. The number following the name of a department refers to the number of the course as shown under the caption "Departments of Instruction."

The time devoted each week to the several subjects is expressed in clock-hours. The hours devoted to "theory" (which includes recitations and lectures) are indicated in the column headed "Rec.," the hours devoted to "practice" (which includes work in laboratory, shop, drawing room or field), are indicated in the column headed "Pr."

A "term-hour" is one clock-hour of "theory" or two clock-hours of "practice."

The curricula for the classes of '16, '17, '18 are shown in the Appendix.

Note.—In addition to the work shown in the several curricula, students taking English are required to attend conferences with their instructors; and all undergraduates have military drill three times a week.

ADMISSION.

Requests for entrance blanks and all communications in regard to admission should be addressed to

THE REGISTRAR,
Agricultural and Mechanical College of Texas,
College Station, Texas.

GENERAL REQUIREMENTS.

AGE, HEALTH, CHARACTER.

The applicant for admission must be at least sixteen years old and physically able to perform the duties of a cadet. He must be free from contagious or infectious disease. If he comes from another college he must present a certificate of honorable dismissal.

VACCINATION.

The applicant for admission must present a certificate signed by a physician, in one of the forms given below:

1. ...., Texas, ...191....

This is to certify that....................has had smallpox.

(Signed) ....M. D.

2. ...., Texas, ...191....

This is to certify that......................has been successfully vaccinated at two different times, the dates being.............
....

(Signed) ....M. D.

3. ...., Texas, ...191....

This is to certify that......................has been successfully vaccinated within the last five years.

(Signed) ....M. D.

4. ...., Texas, ...191....

This is to certify that I have today vaccinated.................
....

(Signed) ....M. D.

SCHOLARSHIP REQUIREMENTS.

The scholarship requirements for admission are expressed in terms of units.

Definition of a Unit.—A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work.

This statement is designed to afford a standard of measurement for

the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but, under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute hours, or their equivalent. Schools organized on any other than a four-year basis can, nevertheless, estimate their work in terms of this unit. A four year's secondary school curriculum should be regarded as representing not more than sixteen units of work.

The following statements show in detail the requirements for admission to the Freshman class and to the several short Courses; and the ways in which the required entrance units may be secured:

ADMISSION TO THE FRESHMAN CLASS.

Full Admission.—For full admission to the Freshman Class the applicant must present fourteen units, of which the five and one-half units in list A, below, are prescribed for all applicants. The remaining eight and one-half units must be chosen from list B.

Conditional Admission.—The applicant who presents the five and one-half units in list A and enough elective units from list B to make a total of twelve units will be admitted conditionally. Students admitted conditionally must, within two years, make up two units by examination or by extra work in the College.

LIST A. PRESCRIBED UNITS.

Algebra through quadratics	1½ units
Plane Geometry	1 unit
English	3 units
Total	5½ units

LIST B. ELECTIVE UNITS.

Agriculture	1, 2, 3 or 4 units
American History	½ or 1 unit
Ancient History	1 unit
Bookkeeping	½ unit
Botany	½ or 1 unit
Chemistry	1 unit
Civics	½ unit
Drawing	½ or 1 unit
English	1 unit
English History	1 unit
French	1 or 2 units
German	1 or 2 units
Latin	1, 2, 3, or 4 units
Manual Training	½ or 1 unit
Medieval and Modern History	1 unit

Physics	1 unit
Physiography	½ unit
Physiology	½ unit
Spanish	1 or 2 units
Solid Geometry	½ unit
Stenography	½ unit
Trigonometry	½ unit
Typewriting	½ unit

Special Requirements.—1. In the School of Engineering, students not presenting Solid Geometry for entrance will be required to take that subject as an extra study in the first term of the Freshman year. Special classes will be formed for this purpose.

2. Students admitted conditionally and not presenting Physics for entrance will be required to take an elementary course in Physics as an extra study during the Freshman year.

3. Freshmen who are required to take an extra study may be required to postpone one of the regular studies of the Freshman year.

METHODS OF ADMISSION.

The required entrance units may be secured:

(A) By certificate from a secondary school.
(B) By examination.
(C) By completing the work of the first year of certain short Courses.

(A) ADMISSION BY CERTIFICATE.

The applicant must present a satisfactory certificate made out on the official application blank (to be obtained from the Registrar), which must be signed by the Superintendent or the Principal of the school from which he comes. It must give a full statement of the preparatory work done by the applicant, and must show that he is entitled to the required number of entrance units as set forth above.

It is highly important that the applicant send this certificate, properly filled out, to the Registrar in advance. If this cannot be done, he should bring it with him at the opening of the session.

(B) ADMISSION BY EXAMINATION.

Any or all scholarship requirements may be met by passing the entrance examinations. The applicant must, in advance, send or hand to the Registrar a list of the subjects in which he wishes to be examined. Entrance examinations for 1915-16 will be held September 22 and September 23, 1915.

(C) ADMISSION TO THE FRESHMAN CLASS ON COMPLETION OF THE WORK OF THE FIRST YEAR OF A SHORT COURSE.

Students admitted, with eight entrance units, to the two-year elective Course in Agriculture, or to the two-year Course in Engineering, will, upon completion of the first year's work, be entitled to six additional entrance units, making a total of fourteen. If the fourteen include the prescribed units in English, Algebra and Plane Geometry, such students will be eligible for admission to the Freshman class. In estimating entrance units secured in this way, six "term hours" are counted as one entrance unit.

ADMISSION TO SHORT COURSES.

Elective Two-Year Course in Agriculture.

Two-Year Course in Engineering.

For admission to these Courses the applicant must present eight entrance units. of which English, two units, and Algebra to simultaneous equations, one units, are prescribed. To make up the total of eight units the applicant must present five additional units from the subjects under lists A and B above.

Prescribed Two-Year Course in Agriculture.

Two-Year Course for Electricians.

Two-Year Course for Power and Plant Operators.

Two-Year Course in Textile Engineering.

One-Year Course in Telephony.

In order to be admitted to one of these Courses, the applicant must present a satisfactory certificate of proficiency in English Grammar and Composition, and in Algebra to simultaneous equations of the first degree; or must pass entrance examinations in these subjects.

ADMISSION WITH ADVANCED STANDING.

Admission with advanced standing may be secured by examination or by transfer of credits from a college of approved standing. The applicant for advanced standing by transfer must present a certified record of work done in the institution from which he comes, accompanied by a certificate of honorable discharge.

College credit will not be given for work presented to satisfy the entrance requirements.

ADMISSION OF SPECIAL STUDENTS.

Young men over twenty-one years of age, who cannot satisfy all the requirements for admission and are not candidates for a degree, will be permitted to enter the College upon submitting satisfactory evidence that they are prepared to profit by the studies they desire to take. This evidence must be submitted on the official entrance blank and mailed in advance to the Registrar. In order to be admitted to the work of any department, a special student must have the consent of the head of the department; and his course of study, as a whole, must be submitted to the Dean of the College for approval. In special cases the Dean may admit as special students young men between eighteen and twenty-one years of age.

A special student, who may desire to become a candidate for graduation, must satisfy the entrance requirements and obtain the consent of the Dean.

ADVISERS FOR FIRST-YEAR STUDENTS.

Each student on entering College will be assigned to a member of the teaching staff, who will act as his adviser and give him helpful counsel in matters pertaining to his work or to any feature of his college life.

REGISTRATION.

Upon arrival at the College, young men intending to enter will report at once to the Commandant for temporary assignment to quarters, and for full information in regard to registration.

Tuesday, Wednesday and Thursday, September 21, 22 and 23, devoted to the registration of Students. Recitations will begin Friday, September 24.

REGISTRATION FEE.

Every student is required to register when he first enters College and thereafter at the beginning of each term.

Upon registering for the first time he is charged a registration fee of three dollars. He pays this fee only once unless his connection with the College should later be severed; in that case he must pay the registration fee again in order to re-enter.

LATE REGISTRATION.

All students, except those registering for the first time, who do not complete their registration on the days set for that purpose, will be charged a fee of three dollars for late registration.

In the case of irregular and special students, registration is not complete until their assignment cards are returned, properly signed, to the Registrar.

EXPENSES FOR THE SESSION.

The fixed charges are:

Trust fund, payable on entrance	$ 5 00	
Incidental fee, payable on entrance	5 00	
Medical fee, payable on entrance	8 00	
Laboratory fee, payable on entrance	1 25	
Maintenance, First Term, payable on entrance	80 00	
		$ 99 25
Maintenance, Second Term, payable February 3	80 00	
Laboratory fee, payable February 3	1 25	
		81 25
		$180 50

Other necessary expenses are:

Uniform, payable on entrance, about	$30 00	
Books, from $15 to	20 00	
		$ 50 00
Total		$230 50

For Freshmen in the engineering courses, drawing instruments, about .... $ 10 00

The student will need at entrance at least $160.

Payment should be made by bank exchange, money order, or in cash. Personal checks will not be accepted.

The trust fund is to pay for property damaged or destroyed, and will be returned to the parent if there is no charge of this kind against the student, or if he is not otherwise indebted to the College.

The incidental fee is used for sundry incidental expenses, such as printed forms, examination books, etc.

The medical fee covers the professional services of the College Surgeon and of the hospital staff.

Incidental and medical fees will in no case be refunded.

Maintenance includes board, fuel, washing, lights, room rent, single bedsteads, mattresses, tables, washstands, chairs.

Each student is required to keep on hand a supply of bed clothing for single beds, towels, etc. For winter he should provide himself with an overcoat and a mackintosh.

Students are required to take their meals at the Mess Hall.

Payment for each term must be made in advance. A student entering during a term will be charged maintenance for the remainder of that term only.

A student once entering for a term, and having paid for that term, or the balance of it, forfeits all claim to said payment in case of voluntary withdrawal from the College before the expiration of said term, except in case of sickness disqualifying him for the discharge of his duties for the rest of the term. When such sickness takes place at the College, it must be attested by the College Surgeon before the student can receive the balance of his maintenance fund.

The expenses of a graduate student are $5.00 for material used in laboratories and practical work, and $8.00 for medical fee, with charge for maintenance as above.

Day students pay $18, to cover trust fund, incidental fee, and medical fee, as above.

UNIFORM.

Every cadet must keep on hand in good condition: 1 regulation blouse, 2 pairs regulation gray trousers, 2 pairs regulation white trousers, 1 regulation cap, 1 regulation hat, 6 regulation shirts, 2 regulation white shirts, 6 standing white collars, 6 turned down white collars, 1 pair black shoes, 4 pairs white gloves, 1 regulation tie, 1 regulation belt, 1 working suit, 1 pair regulation leggins, 1 pair regulation olive drab cotton breeches, 1 set collar ornaments; and an ample supply of underwear.

In addition, each student must have, for shop and field practice, a working suit of drilling, which costs from $1.50 to $2.50.

The blouses, trousers, caps and hats are made by contract, and students are required to purchase from the contractors, in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons, and may secure the best material for the lowest price. All parts of the equipment are carefully inspected by the Commandant of Cadets, in order that good fits and satisfactory materials may be secured.

By means of the contract system not only is there a saving effected, but there is also furnished a guarantee that the material will be of the requisite pattern and quality. For the efficient enforcement of the arrangements entered into, the College authorities require that each student make his purchases through the machinery provided at the College, and that a deposit sufficient to cover the purchase price of the equipment be placed in the hands of the Treasurer when the cadet matriculates. No suit will be ordered until such deposit has been made.

The other regulation articles may be purchased at the exchange store mentioned below.

It should be distinctly realized that this clothing is not an additional expense, but that it is the cheapest clothing that cadets can wear. It is very neat in appearance, and is serviceable and durable.

CADET EXCHANGE—BOOKS AND OTHER SUPPLIES.

The College runs an exchange store for the purpose of supplying necessary articles to students at the lowest possible cost. The store carries in stock, books, stationery, drawing instruments, regulation articles of the uniform, toilet articles, etc. These goods are sold at prices just sufficient to cover cost and operating expenses.

STUDENT LABOR.

The Legislature has provided a fund by which a limited number of industrious young men may defray a part of their expenses by working for the College at such times as their regular duties will permit.

The rate of pay is made to depend upon the character of the work, and the manner in which it is performed. A student should not count upon earning more than $40 a session.

THE SCHOOL OF AGRICULTURE.

FACULTY.

WILLIAM BENNETT BIZZELL, M. A., D. C. L.,
President.

E. J. KYLE, M. S. A.,
Dean.

CHARLES PURYEAR, M. A., C. E., LL. D.,
Dean of the College and Professor of Mathematics.

M. FRANCIS, D. V. M.,
Professor of Veterinary Science.

E. J. KYLE, M. S. A.,
Professor of Horticulture.

C. P. FOUNTAIN, A. M.,
Professor of English.

O. M. BALL, M. A., Ph. D.,
Professor of Biology.

O. F. CHASTAIN,
Professor of History.

WILMON NEWELL, M. S.,
Professor of Entomology.

J. OSCAR MORGAN, M. S. A., Ph. D.,
Professor of Agronomy.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

M. L. HAYES, A. M.,
Professor of Agricultural Education.

C. B. CAMPBELL, Ph. D.
Professor of Modern Languages.

J. W. RIDGWAY, M. S.,
Professor of Dairy Husbandry.

W. T. WRIGHT, A. B.,
Professor of Physics.

T. L. KIBLER, Ph. D.,
Professor of Economics.

JAMES R. HILL, Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics,
Commandant of Cadets.

R. F. SMITH,
Associate Professor of Mathematics.

R. P. MARSTELLAR, D. V. M.
Associate Professor of Veterinary Science.

W. H. THOMAS, B. Lit.,
Associate Professor of English.

A. T. POTTS, B. S.,
Associate Professor of Horticulture.

E. C. GEE, B. S.,
Associate Professor of Agricultural Engineering.

J. D. BLACKWELL, B. Pd., B. S. A.,
Associate Professor of Agricultural Education.

J. W. BELL, B. S. A.,
Associate Professor of Animal Husbandry.

L. B. BURK, B. S. A.,
Associate Professor of Animal Husbandry.

S. A. McMILLAN, B. S.,
Associate Professor of Agronomy.

COURSES OF STUDY.

In the School of Agriculture there are offered the following Courses:

REGULAR FOUR-YEAR COURSES.

Course in Agriculture.
Course in Science.

SHORT COURSES.

Prescribed Two-year Course.
Elective Two-year Course.
Summer Short Course for Farmers.

REGULAR COURSES.

The regular four-year Courses have as their main object the preparation of young men for the business of farming, the pursuit of scientific investigation along some line of agriculture, and for teaching in high schools and agricultural colleges. These Courses also afford excellent preparation for young men who intend to follow business pursuits. Systematic training is given in the sciences of biology, chemistry, entomology and physics, which are fundamental to the study of scientific agriculture, and in technical subjects, covering the main divisions of agriculture, including agronomy, animal husbandry, dairy husbandry and horticulture. In the Course in Agriculture emphasis is placed mainly on these technical subjects; in the Course in Science, it is placed mainly on the sciences underlying the study of agriculture. In each of these Courses the work of the Freshman and Sophomore years is prescribed; the work of the Junior year is to some extent elective, and that of the Senior year mostly elective; and the student will be given the opportunity to choose his studies with the view of specializing in the subject in which he is chiefly interested.

In the choice of elective subjects, the student will be subject to the advice and direction of the head of the department in which he takes his leading subject. He may take his leading subject in any one of the following departments: Agricultural education, agricultural engineering, agronomy, animal husbandry, biology, chemistry, dairy husbandry, entomology, horticulture, veterinary science.

SHORT COURSES.

The short Courses are designed for young men who wish to spend one or two years in the study of the more important of the scientific methods of farming which have been worked out in recent years. In the prescribed Course, the studies are all prescribed; in the elective Course, the student is required to select work amounting to eighteen credit hours a week, subject to the advice and direction of a member of the Faculty designated for the purpose. Upon completion of the first year's work in the elective two-year Course, the student will be qualified to enter the Freshman class. Students who have had approved farm experience will, upon completion of one of these Courses, be entitled to a certificate.

SUMMER SHORT COURSE FOR FARMERS.

This Course is planned especially for the practical farmer who has not had the opportunity of taking a regular agricultural Course.

The work includes lectures, demonstrations and practice in soils, fertilizers, farm crops, and farm management; judging live stock, feeding live stock, and breeding live stock; the care and handling of milk, the manufacturing of products from milk, the management and operation of creameries; plant propagation, vegetable gardening and orcharding; construction and operation of farm machinery; insects and plant diseases; veterinary science; cotton classing; terracing and good roads; poultry; domestic science, including lectures on cooking and sewing.

The Course is given during the latter part of July, so as to meet the convenience of the greatest number of farmers of the State. The work covers one week.

There are no entrance requirements, and the expenses have been reduced to a minimum.

For detailed information, address the Dean of the School of Agriculture, College Station, Texas.

I.—COURSE IN AGRICULTURE.

Freshman Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agronomy 101 El. Crop Production	1	2	Animal Husbandry 102 Market Types	0	4
Animal Husbandry 101 Market Types	0	4	Animal Husbandry 104 Farm Poultry	1	2
Biology 101 Botany	2	2	Biology 102 Botany	2	2
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
English 101 Rhetoric and Composition	2	0	Dairy Husbandry 102 El. Dairying	2	2
Mathematics 103 Trigonometry	3	0	English 102 Rhetoric and Composition	2	0
Physics 101 Principles of Physics	2	2	Physics 102 Principles of Physics	2	2
	13	12		12	14

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Biology 201 Zoology	2	2	Animal Husbandry 202 Breed Types	2	2
Biology 205 Bacteriology	2	4	Biology 202 Zoology	2	2
Chemistry 201 Organic	2	2	Chemistry 206 Geology	2	2
English 201 Literature	2	0	English 202 Literature	2	0
Horticulture 201 Plant Propagation and Orcharding	3	2	Horticulture 202 Vegetable Gardening	3	2
Veterinary Science 201 Anatomy and Physiology	2	2	Military Science 202 Drill Regulations	1	0
			Veterinary Science 202 Non-infectious Diseases	2	2
	13	12		14	10

Junior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agronomy 301 Soils	3	4	Agronomy 302 Farm Crops	4	2
Chemistry 309 Analytical	1	4	Chemistry 302 Agricultural	2	2
English 301 Argumentation	1	0	English 302 Argumentation	1	0
Entomology 301 Systematic	2	2	Entomology 302 Economic	2	2
Elective	5	4	Military Science 302 Tactics	1	0
			Elective	4	4
	12	14		14	10

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Economics 401 Fundamental Principles	3	0	Agronomy 402 Farm Management	3	4
English 401 Public Speaking	1	0	Economics 402 Rural Economics	3	0
Military Science 401 Tactics	1	0	English 402 Public Speaking	1	0
Elective	10	8	Elective	8	4
	15	8		15	8

X.—COURSE IN SCIENCE.

Freshman Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Biology 103 Botany	3	2	Biology 104 Botany	3	2
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
English 101 Composition and Rhetoric	2	0	Civil Engineering 102 Surveying	3	4
Mathematics 103 Trigonometry	3	0	English 102 Composition and Rhetoric	2	0
Modern Language 213 German	3	0	Modern Language 214 German	3	0
Physics 101 Principles of Physics	2	2	Physics 102 Principles of Physics	2	2
	16	6		16	10

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Biology 201 Zoology	2	2	Biology 202 Zoology	2	2
Chemistry 203 Organic	3	4	Chemistry 204 Organic	3	2
English 201 Literature	2	0	Chemistry 206 Geology	2	2
Entomology 201 Systematic	2	2	English 202 Literature	2	0
History 201 Modern Europe	3	0	Entomology 202 Economic	2	2
Modern Language 223 German	2	0	History 202 Modern Europe	3	0
			Military Science 202 Drill Regulations	1	0
			Modern Language 224 German	2	0
	14	8		17	8

Junior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agronomy 301 Soils	3	4	Agronomy 302 Farm Crops	4	2
Chemistry 309 Analytical	1	4	Chemistry 302 Agricultural	2	2
Economics 303 Fundamental Principles	3	0	Economics 304 Rural Economics	3	0
English 301 Argumentation	1	0	English 302 Argumentation	1	0
Elective	8	0	Military Science 302 Tactics	1	0
			Elective	8	0
	16	8		19	4

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Economics 405 Credit and Marketing	3	0	Economics 406 Rural Problems	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0	Elective	16	0
Elective	15	0			
	20	0		20	0

C.—PRESCRIBED TWO-YEAR COURSE IN AGRICULTURE.

First Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agronomy 23 Soils	3	2	Agronomy 24 El. Crop Production	3	2
Animal Husbandry 21 Market Types	0	6	Animal Husbandry 22 Breeds and Types	2	2
Biology 13 Zoology	3	2	Biology 14 Zoology	3	2
English 11 Grammar, Composition	3	0	Dairy Husbandry 22 Elementary Dairying	2	2
Horticulture 21 Plant Propagation	3	2	English 12 Grammar, Composition	3	0
Textile Engineering 17 Cotton Classing	0	2	Horticulture 22 Vegetable Gardening	3	2
	12	14		16	10

Second Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Engineering 51 General	3	4	Agronomy 52 Farm Eqpt. and Mgm.	3	2
Animal Husbandry 55 Poultry	3	2	Animal Husbandry 52 Breeding	1	2
Dairy Husbandry 53 Farm Dairying	2	4	Animal Husbandry 56 Feeding	2	2
English 51 Practical Composition	3	0	English 52 Practical Composition	3	0
Horticulture 53 Tree and Vine Fruits	3	2	Entomology 54 Economic	2	2
			Veterinary Science 52 Animal Diseases	3	2
	14	12		14	10

D.—ELECTIVE TWO-YEAR COURSE IN AGRICULTURE.

First Year.

(Eighteen term hours each term from the following:)

First Term.	Hours per week. Rec.	Pr.
Agricultural Engineering 11 Irrigation and Drainage	1	2
Agricultural Engineering 13 Farm Machinery and Motors	2	2
Agronomy 21 Elementary Agriculture	3	2
Agronomy 23 Soils	3	2
Biology 13 Zoology	3	2
Dairy Husbandry 23 Farm Dairying	2	2
Drawing 15 Mechanical	0	2
Drawing 17 Freehand	0	2
English 21 Practical Composition	3	0
Mathematics 11 Plane Geometry	3	0
Mechanical Engineering 37 Shop Work	0	4
Physics 11 Elementary	3	2

Second Term.	Hours per week. Rec.	Pr.
Agronomy 22 Elementary Agriculture	3	2
Agronomy 26 Farm Crops	3	2
Biology 14 Zoology	3	2
Drawing 16 Mechanical	0	2
Drawing 18 Freehand	0	2
Entomology 24 Economic	2	2
English 22 Practical Composition	3	0
Mathematics 12 Plane Geometry	3	0
Mathematics 16 Algebra	3	0
Mechanical Engineering 38 Shop Work	0	4
Physics 12 Elementary	3	2
Veterinary Science 12 Animal Diseases	3	2

Second Year.

(Eighteen term hours each term from the following:)

Agricultural Engineering 51 Irrigation and Drainage	1	2
Agricultural Engineering 53 Farm Machinery and Motors	2	2
Agronomy 53 Soils	3	2
Animal Husbandry 51 Market Types	0	6
Animal Husbandry 53 Breed Types	2	2
Biology 51 Zoology	3	2
Biology 53 Botany	2	2
Chemistry 51 Practical	3	2
Dairy Husbandry 53 Farm Dairying	2	2
Entomology 51 Systematic	2	2
Horticulture 51 Plant Propagation	3	2
Horticulture 53 Tree and Vine Fruits	3	2
Horticulture 55 Spraying	1	4

Agronomy 52 Farm Eqpt. and Mgm.	3	2
Agronomy 54 El. Crop Production	3	2
Agronomy 56 Farm Crops	3	2
Animal Husbandry 52 Animal Breeding	1	2
Animal Husbandry 54 Farm Poultry	1	2
Animal Husbandry 56 Feeding	2	2
Biology 52 Botany	3	2
Biology 54 Botany	2	2
Dairy Husbandry 52 Elementary Dairying	2	2
Entomology 52 Economic	2	2
Horticulture 52 Vegetable Gardening	3	2
Horticulture 54 Plant Breeding	2	2
Horticulture 58 Nut Culture	2	2
Veterinary Science 52 Animal Diseases	3	2

GRADUATE COURSE IN AGRICULTURE.

Graduate studies in the Course in Agriculture lead to the degree of Master of Science (in Agriculture). It is required for admission to this course that the candidate be a graduate of this College, or of some other institution approved by the Faculty.

The candidate must register with the Dean of the College, and must take the equivalent of 12 hours theory and 18 hours practice a week for one year in two or three of the following departments: agronomy, animal husbandry, biology, chemistry, entomology, horticulture, veterinary science; this course of study to be approved by a committee consisting of the Dean of the College and the heads of departments concerned. Unless he has credit in organic chemistry, he must take it as a part of this course.

He must present as a part of this work a thesis satisfactory to the committee. The thesis must be typewritten on paper 8½x11 inches.

In addition to the fees regularly charged, he must pay to the Business Manager a fee of two dollars to cover the cost of binding his thesis.

THE SCHOOL OF ENGINEERING.

FACULTY.

WILLIAM BENNETT BIZZELL, M. A., D. C. L.,
President.

D. W. SPENCE, C. E.,
Dean.

CHARLES PURYEAR, M. A., C. E., LL. D.,
Dean of the College and Professor of Mathematics.

D. W. SPENCE, C. E.,
Professor of Civil Engineering.

C. P. FOUNTAIN, A. M.,
Professor of English.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

O. F. CHASTAIN,
Professor of History.

J. B. BAGLEY, B. A.,
Professor of Textile Engineering.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

A. MITCHELL, B. C. E.,
Professor of Drawing.

C. C. HEDGES, A. B., Ph. D.
Professor of Chemistry and Chemical Engineering.

H. E. SMITH, M. E.,
Professor of Steam Engineering.

C. B. CAMPBELL, Ph. D.,
Professor of Modern Languages.

W. T. WRIGHT, B. S., A. B.,
Professor of Physics.

T. L. KIBLER, Ph. D.,
Professor of Economics.

R. L. MORRISON, M. A.,
Professor of Highway Engineering.

JAMES R. HILL, Lieutenant, Cavalry, U. S. A.
Professor of Military Science and Tactics and Commandant of Cadets.

R. ADELSPERGER, B. A., B. S.,
Professor of Architecture.

R. F. SMITH,
Associate Professor of Mathematics.

W. H. THOMAS, B. Lit.
Associate Professor of English.

J. J. RICHEY, C. E.,
Associate Professor of Civil Engineering.

A. C. LOVE, B. S.,
Associate Professor of Civil Engineering.

J. H. CANNON, B. S.,
Associate Professor of Electrical Engineering.

B. K. COGHLAN, B. S.,
Associate Professor of Highway Engineering.

COURSES OF STUDY.

In the School of Engineering there are offered the following Courses:

REGULAR FOUR-YEAR COURSES.

Course in Architectural Engineering.
Course in Architecture.
Course in Chemical Engineering.
Course in Civil Engineering.
Course in Electrical Engineering.
Course in Mechanical Engineering.
Course in Textile Engineering.

SHORT COURSES.

Two-Year Course in Engineering.
Two-Year Course for Electricians.
Two-Year Course for Power Plant Operators.
Two-Year Course in Textile Engineering.
One-Year Course in Telephony.
Winter Short Course for Road Supervisors and County Surveyors.
Reading Course in Highway Engineering.
Summer Course in Cotton Classing.

COURSES IN ARCHITECTURE AND ARCHITECTURAL ENGINEERING.

"Architecture is essentially a fine art; but it is a fine art which may be expressed on so large a scale that a deep and comprehensive knowledge of engineering science is necessary to make its expression stable."

In the Course in Architecture stress, is laid on the æsthetic side, and in the Course in Architectural Engineering, on the constructive side of the profession.

Architectural practice has so grown in complexity that it is no longer economically feasible or, in the large sense, desirable, to combine the two abilities. In fact, it rarely happens that the aptitude for both is found in the same individual. Personal preference, then, will guide the student choosing architecture as his life-work in determining which phase of the profession to adopt. But, as both phases are more or less inter-related—the designer must have a certain minimum of constructive ability, and the engineer a certain minimum of designing ability,—it is desirable to make the Courses of study alike to a certain point. For this reason the Courses now offered are identical during the Freshman and Sophomore years, and students are thus carried to a point where a choice can be made with discretion.

The Course in Architecture is designed to prepare men to go into "general practice." While stress is put on design and the pleasing presentation in color, wash or line of the various *projets,* on period decoration, sculpture and painting, a ground-work is laid in the underlying principles of construction, sanitation, lighting, heating, ventilation and the kindred utilities which so frequently go into the modern building.

The Course in Architectural Engineering is designed to prepare men for the more technical and scientific aspect of the profession. The application of constructive principles is broader and more thorough, and the design practice is confined largely to the type of problems construction engineers are called upon to solve.

In both Courses considerable prominence is given to cultural subjects in order to fit the student to meet on an equal plane the type of men that will be his natural clients.

Both courses meet the standard requirements of the Association of American Schools of Architecture.

COURSE IN CHEMICAL ENGINEERING.

This Course is designed to prepare young men for technical work in those industries in which raw materials undergo a chemical change in the process of manufacture. Many fields are open to students trained in applied chemistry, and inquiries are continually being received asking for men capable of filling important positions in different industries. Some industries important to the present and future development of this State are those dealing with cottonseed products, sugar, leather, petroleum, cement, ceramics and iron and steel. The analytical chemistry given in the Course is sufficient to enable the graduate to engage in the work of a commercial plant or to enter an industrial plant as a control chemist. The control chemist repeatedly analyzes and evaluates the raw material used in the manufacture as well as the intermediate and finished products. It is through such control that industries of this kind have been made scientific. Pure food laws and other legal enactments calculated to protect the people against fraud have, of late years, greatly accentuated the importance of this work. At the same time enough work is given in general engineering practice to enable the graduate who enters the work as a control chemist to come in time to a full understanding and mastery of the industry in which he is engaged.

The fifth year's work, leading to the degree of chemical engineer, is designed to facilitate the transformation of the control chemist into the manager of an industrial plant, capable of adapting chemical processes to varying conditions and improving upon them as occasion demands.

COURSE IN CIVIL ENGINEERING.

This course has for its object the preparation of young men for entrance upon professional practice in the fields of surveying; highway construction and maintenance; municipal engineering as related to street location, paving, water supply, sewerage, sewage disposal works, street railways, etc.; railway location, construction and maintenance; the construction of levees and other protection works to guard against damage by overflows; irrigation and drainage engineering; the construction of canals and reservoirs, the installation of pumping plants, filtration works, etc.; the design and construction of bridges, steel buildings, and masonry structures. Attention is given to drafting, to the preparation of contracts, specifications and estimates of cost, and to the supervision of work, etc. A thorough grounding in the underlying principles of engineering is given, together with the application of these principles to as many special lines as time will permit.

In the Division of Highway Engineering the Department of Civil Engineering is meeting a constantly increasing demand along lines of great importance to the State. In addition to conducting classes in road building, and in street paving and improvement, the Professor of Highway Engineering delivers lectures and gives advice on highway matters all over the State to as full extent as his time and other duties permit. Exhibits for instruction in highway engineering are shown at the leading fairs and on demonstration trains for the purpose of giving as many people as possible an opportunity to become familiar with approved methods in these lines. The Professor or Associate Professor of Highway Engineering, and sometimes both, will be present wherever these exhibits are shown to explain the models and to explain present practice.

The fifth year work, leading to the degree of Civil Engineer (C. E.), offers opportunity for more advanced study in some of the branches of Civil Engineering than can be had within the limit of the four-year course. Every student who can afford the time and money is urged to follow his four-year Course, when possible, with the more technical work of the fifth year.

COURSE IN ELECTRICAL ENGINEERING.

The Course in electrical engineering is designed to give the student a thorough training in the underlying principles of direct and alternating current phenomena and of electric measurements. It provides training in subjects fundamental to the general practice of the engineering profession, in the theory of electricity and in the application of the theory to practical problems in many branches of applied engineering.

The work of the first three years of the course is intended to cover most of the fundamental principles of engineering. This is followed in the Senior year by a more detailed study of the applications of these principles. The applied subjects are taught with two objects, the first and more important of which is to impress more firmly on the student's mind the principles already learned. The second object is to give the student some specific information about some branch of electrical engineering. To make this plan most effective, the student is expected to elect an applied subject in his Senior year.

The rapidly increasing number of electrical plants and circuits for power transmission, lighting, transportation, telephoning, and telegraphing demands men who are prepared to design, construct and operate them. The studies in the Course outlined have been carefully selected with this demand in view.

A branch of the American Institute of Electrical Engineering has been organized among the students and affords the means of keeping students in touch with the latest development in the electrical field.

COURSE IN MECHANICAL ENGINEERING.

The Course in Mechanical Engineering is designed with a view of giving the student such training as will fit him to design, construct, and erect machinery, power and industrial plants, equipment, etc., and to manage or to operate the same with the greatest economy of labor and materials.

It is not possible to give the student that skill in the shops and that experience in the laboratories which come with long service in practical work, but the aim is to give him the power to understand and apply the underlying principles which are involved in all problems met with in practical engineering.

When it is remembered that there is a steam power plant or other mechanical equipment connected with practically every industrial enterprise it is apparent that the graduates from the Course in Mechanical Engineering should find a large field for their activities in the industrial development of the State. The training at College followed by a few years contact with the practical work should fit one to take charge of the operation or of the management of almost any industrial enterprise whether strictly mechanical engineering or involving other activities as well.

COURSE IN GENERAL ENGINEERING.

The course in General Engineering is designed for students who seek a general knowledge of engineering subjects rather than the strictly mathematical application of scientific knowledge to any one particular branch. Young men who expect to enter commercial life after leaving College may obtain in this course that general knowledge of engineering principles necessary to an understanding of the problems met with in every day commercial life.

The work of the freshman and sophomore years is prescribed and lays the foundation for the study of general engineering subjects. In the junior and senior years the work is largely elective, and the student is allowed to choose his work from practically all the courses offered by the several engineering departments, though he is required to select a certain amount of work in each of the departments of Civil, Electrical and Mechanical Engineering.

COURSE IN MILITARY ENGINEERING.

The Course in Military Engineering is designed with the view of giving the student a thorough education in general Civil Engineering, and also to prepare him for a commission in the Regular Army of the United States. A number of the graduates of this Institution have entered the Army in the past, and this course is particularly adapted to the needs of those who may hereafter wish to do so.

The first three years of this course are practically indentical with the Civil Enginering Course, and it is in the senior year that the Military studies take a prominent place. A graduate of this course will be well qualified for a commission as Second Lieutenant in the United States Army, and should have no trouble in passing the examinations prescribed by the War Department for all candidates from civil life.

COURSE IN TEXTILE ENGINEERING.

The object of this Course is to prepare young men for entering the field of textile manufacturing. The unprecedented development of the cotton milling industry in the South has brought about an era of prosperity and created a strong demand for educated young men in this industry. The State of Texas offers excellent advantages for the manufacture of cotton goods in its vast supply of raw material, intelligent labor, and excellent climatic conditions, and it is believed that cotton manufacturing will develop as rapidly as skilled and capable managers familiar with local conditions are to be had. The studies outlined have been selected with a view of giving theoretical and practical training in the manufacture of cotton goods as thorough as is possible with the time available.

TWO-YEAR COURSE IN ENGINEERING.

This Course is planned to meet the needs of young men who are not able to spend four years in college, and who desire to get elementary training in some of the phases of engineering. Upon completion of the first year's work in this Course, the student will be qualified to enter the Freshman class.

TWO-YEAR COURSE FOR ELECTRICIANS.

The Course for electricians is as complete in both theoretical and practical training as is possible in two years. It is intended to be a thoroughly practical Course, giving a familiarity with modern electric machines and their underlying principles.

The Course gives ample preparation for many positions in the electrical industry, and has for its object the training of young men for positions in power, lighting and railway plants and telephone service and in other industries using electricity and electrical machines.

The Course is designed particularly for young men who have had some practical experience in electrical work and who wish to add to their theoretical knowledge of electricity and allied subjects in order that they may prepare themselves for promotion to positions of greater responsibility.

TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

The Two-Year Course for Power Plant Operators is a short Course for those men who are unable to take a full four-year Course. Wherever it is possible for him to do so, the student is urged to take the regular four-year Course. The two-year Course is particularly intended for the man who has been at work in a power house and who finds he is handicapped by a lack of theoretical preparation or education, and who finds himself thus prevented from making reasonable advancement. It is assumed that he will enter upon this Course with a very well defined idea of what he needs and with a determination to make the most of his opportunities. While the entrance requirements are made so low as to enable any deserving applicant to enter, any additional preparation or training he may possess will make it possible for him to better take advantage of the opportunities here given him.

The student completing this Course should find ready employment in subordinate positions at the numerous power plants of the State and should rapidly develop to the more responsible operating positions.

ONE-YEAR COURSE IN TELEPHONY.

This Course is intended for the young man who wishes to make an intense theoretical and practical study of the equipment used in the telephone industry. The Course begins with a study of the principles of electricity and magnetism, including such principles of alternating currents as are directly applicable to telephony. The various parts of the telephone are studied, as are distributing frames and switchboards.

A detailed study is made of the entire telephone plant, the principles of its design, and the methods of testing. The student is required to design at least two telephone plants. Special emphasis is laid on methods of testing telephones and telephone circuits, and the student is given practice in making these tests under conditions approximately the same as are encountered in commercial work.

The course of instruction is augmented by occasional lectures from men in the commercial telephone field.

SUMMER SCHOOL OF COTTON CLASSING.

The seventh session of the Summer School of Cotton Classing will open June 14, 1915, and will continue six weeks.

The object of the course in Cotton Classing is to prepare young men for cotton buying and the running of cotton warehouses, and to offer to farmers the opportunity to increase their knowledge of the leading farm crop of Texas.

A study is made of the elements which determine the commercial grades of cotton, the influences which affect the price of cotton; the system of financing the crop from field to the factory, and the relation of exchanges to the business in general. New samples are put each day on the cotton tables for practice, and the work is patterned somewhat after that of a cotton office.

The first hour each morning will be spent in the study of Miller's "American Cotton System," the Government's Report on "Cotton Exchanges," and other literature on the subject, together with the handling of banking and shipping papers used in the business.

EXPENSES.

Registration fee	$ 7 50
Board at local hotel, per month	20 00
Room at local hotel, per month	8 00
Board in Mess Hall and room in Dormitory, per week	5 00

The registration fee is in no case refunded.

EQUIPMENT.

Students in the Summer School will have the use of the library and reading room, and of the shower baths. Those interested will have the opportunity to inspect the College farm, sheds, barns, silos, dairy, creamery and experimental plots.

Instruction in Cotton Classing is given in the Textile Building, and there the student can be shown the processes of manufacturing cotton and where the cotton goes.

The Government standards for classing cotton, which have been adopted by nearly all the leading exchanges with the exception of New York, will be used.

The State Experiment Station has in its cotton laboratory a fiber testing machine, showing the breaking strength of the individual fiber, and an instrument for measuring the length accurately. Demonstrations will be made showing the use and value of these machines.

WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY SURVEYORS

The Department of Civil Engineering will, during the session of 1915-16, offer a short course for public road supervisors, road overseers, county surveyors, and others interested in such work. This course will cover the most important features of country road construction and maintenance, and will consist of lectures, recitations, and field work. It will be open only to men over twenty-one years of age.

The course will begin Wednesday, January 12, and will extend through Tuesday, January 25, 1916. No entrance examinations will be required, and no college credit or certificate of proficiency will be given. Rooms will be charged for at the rate of $1.00 a week to cover cost of light, heat and janitor service. Meals will be furnished at the Mess Hall at 25 cents each, or $4.00 a week.

All students must register at the office of the Dean.

READING COURSE IN HIGHWAY ENGINEERING.

It is believed that there are many engineers, and other men, interested in highway work who may not find it convenient to attend the regular courses in highway engineering, but who would like to take advantage of the College facilities to do studying along special lines adapted to their particular needs.

To such men the College offers the use of its libraries, files of technical magazines, bulletins, circulars, trade catalogues, road exhibits, laboratory, etc. The members of the Highway Engineering staff may be consulted at any time and will outline courses and put the student in touch with the best sources of information on any subject.

Persons over 21 years of age will be admitted to this course at any time of the session and may remain as long as they desire. No entrance examinations are required and no college credit is given. There is no charge except for room and board. Rooms may be obtained in the dormitories for $1.00 a week, and meals will be served in the Mess Hall for 25 cents each, or $4.00 a week.

All students must register at the office of the Dean of the College.

Persons desiring to take this course should correspond in advance with the Dean of Engineering.

IX.—COURSE IN ARCHITECTURE

Freshman Year.

First Term.	Hours per week. Rec.	Pr.
Architecture 101 Elements	0	9
Chemistry 101 Inorganic	3	2
Drawing 101 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0
Drawing 109 Freehand	0	4
English 103 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0
Mathematics 103 Trigonometry	3	0
	14	18

Second Term.	Hours per week. Rec.	Pr.
Architecture 102 Elements	0	9
Architecture 106 Elements of Design	1	0
Chemistry 102 Inorganic	3	2
Drawing 104 Descriptive Geometry	2	0
Drawing 110 Freehand	0	4
Drawing 112 Shades, Shadows and Perspective	0	3
English 104 Rhetoric and Composition	3	0
Mathematics 102 Algebra	3	0
Mathematics 104 Analytics	3	0
	15	18

Sophomore Year.

Architecture 201 Design	0	12
Architecture 205 Carpentry	2	0
Architecture 207 History of Architecture	2	0
Architecture 209 Theory of Design	1	0
Drawing 209 Freehand	0	4
English 203 Composition	1	0
Mathematics 201 Analytics	1	0
Mathematics 203 Calculus	4	0
Physics 203 General	3	2
	14	18

Architecture 202 Design	0	12
Architecture 206 Carpentry	3	0
Architecture 208 History of Architecture	2	0
Drawing 210 Freehand	0	4
English 204 Composition	1	0
Mathematics 204 Calculus	3	0
Military Science 202 Drill Regulations	1	0
Physics 204 General	3	4
	13	20

Junior Year.

Architecture 301 Design	0	15
Architecture 305 Masonry	3	0
Architecture 307 Plumbing	2	0
Architecture 309 History of Architecture	2	0
Civil Engineering 317 Strength of Materials	2	2
Drawing 309 Freehand	0	4
English 301 Argumentation	1	0
Mod. Language 211, 213, 215 French, German or Spanish	3	0
	13	21

Architecture 302 Design	0	15
Architecture 306 Steel Construction	2	0
Architecture 308 Heating	2	0
Architecture 310 Historic Ornament	2	0
Drawing 310 Freehand	0	4
Electrical Engineering 310 Electrical Lighting	2	2
English 302 Argumentation	1	0
Military Science 302 Tactics	1	0
Mod. Language 212, 214, 216 French, German or Spanish	3	0
	13	21

Senior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Architecture 401 Design	0	15	Architecture 402 Design	0	24
Architecture 405 History of Sculpture	1	0	Architecture 406 History of Painting	2	0
Civil Engineering 413 Reinforced Concrete	2	2	Architecture 408 Business Practice	2	0
Civil Engineering 431 Stresses	2	3	Drawing 410 Freehand	0	4
Drawing 409 Freehand	0	4	Economics 404 Business Organization	3	0
Economics 403 Fundamental Principles	3	0	English 402 Public Speaking	1	0
English 401 Public Speaking	1	0			
Military Science 401 Tactics	1	0			
	10	24		8	28

One of the following:

History 403 Amer. History and Government	2	0	History 404 Amer. History and Government	2	0
Mod. Language 321, 323, 325 French, German or Spanish	2	0	Mod. Language 322, 324, 326 French, German or Spanish	2	0

VII.—COURSE IN ARCHITECTURAL ENGINEERING.

The Freshman and Sophomore years of the Course in Architectural Engineering are identical with those of the Course in Architecture, which see.

Junior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Architecture 303 Structural Design	0	12	Architecture 304 Structural Design	0	12
Architecture 305 Masonry	3	0	Architecture 306 Steel Construction	2	0
Architecture 307 Plumbing	2	0	Architecture 308 Heating	2	0
Architecture 309 History of Architecture	2	0	Civil Engineering 302 Graphics	0	2
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 308 Roofs and Bridges	3	0
Drawing 309 Freehand	0	4	Drawing 310 Freehand	0	4
English 301 Argumentation	1	0	Electrical Engineering 310 Electric Lighting	2	2
			English 302 Argumentation	1	0
			Military Science 302 Tactics	1	0
	12	18		11	20

One of the following groups:

(1)

Mod. Language 211, 213, 215 French, German or Spanish	3	0	Mod. Language 212, 214, 216 French, German or Spanish	3	0

(2)

Mechanical Engineering 301 Steam Engines and Boilers	2	0	Electrical Engineering 314 Electrical Machinery	2	0
Mechanical Engineering 333 Carpentry	0	4	Mechanical Engineering 334 Structural Steel	0	4

Senior Year.

Architecture 403 Structural Design	0	15	Architecture 404 Structural Design	0	18
Civil Engineering 413 Reinforced Concrete	2	2	Architecture 408 Business Practice	2	0
Civil Engineering 431 Stresses	2	3	Civil Engineering 438 Higher Structures	2	3
Civil Engineering 433 Surveying	2	2	Chemistry 406 Geology	3	2
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0			
	11	22		11	23

One of the following:

History 403 Amer. History and Government	2	0	History 404 Amer. History and Government	2	0
Mod. Language 321, 323, 325 French, German or Spanish	2	0	Mod. Language 322, 324, 326 French, German or Spanish	2	0
Architecture 409 Fire Prevention Eng.	2	0	Architecture 410 Building Codes	2	0

VIII.—COURSE IN CHEMICAL ENGINEERING.

Freshman Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 205 Qualitative Analysis	2	8	Chemical Engineering 202 Quantitative Analysis	1	6
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
Mathematics 201 Analytics	1	0	Mathematics 204 Calculus	3	0
Mathematics 203 Calculus	4	0	Mechanical Engineering 206 Elementary Steam Eng.	3	0
Mod. Language 211 or 213 French or German	3	0	Military Science 202 Drill Regulations	1	0
Physics 203 General	3	2	Mod. Language 212 or 214 French or German	3	0
			Physics 204 General	3	4
	14	14		15	12

Junior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemical Engineering 301 Adv. Quan. Analysis	1	8	Chemical Engineering 302 Adv. Quan. Analysis	1	3
Chemical Engineering 307 Industrial	3	0	Chemistry 304 Organic	3	2
Chemistry 303 Organic	3	4	Chemistry 306 Geology	3	2
Chemistry 305 History	1	0	Civil Engineering 314 Strength of Materials	2	2
Electrical Engineering 305 Electrical Machinery	2	0	Electrical Engineering 306 Electrical Machinery	2	3
English 301 Argumentation	1	0	English 302 Argumentation	1	0
Mechanical Engineering 315 Mechanical Laboratory	0	3	Military Science 302 Tactics	1	0
Mod. Language 321 or 323 French or German	2	0	Mod. Language 322 or 324 French or German	2	0
	13	15		15	12

Senior Year.

First Term.	Hours per week.	
	Rec.	Pr.
Chemical Engineering 401 Physical Chemistry	3	4
Chemical Engineering 403 Technical Analysis	2	8
Economics 403 Fundamental Principles	3	0
English 401 Public Speaking	1	0
Military Science 401 Tactics	1	0
Elective	5	0
	15	12

Second Term.	Hours per week.	
	Rec.	Pr.
Chemical Engineering 402 Physical Chemistry	3	4
Chemical Engineering 404 Technical Analysis	2	6
Chemical Engineering 406 Microchemical Methods	0	2
Economics 404 Business Organization	3	0
English 402 Public Speaking	1	0
Elective	5	0
	14	12

NOTE—The electives selected by the student are subject to the approval of the head of the Chemical Engineering Department.

IV.—COURSE IN CIVIL ENGINEERING.

Freshman Year.

First Term.	Hours per week. Rec.	Hours per week. Pr.	Second Term.	Hours per week. Rec.	Hours per week. Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Civil Engineering 201 Surveying, Leveling and Topog.	3	4	Civil Engineering 202 Railroad Engineering	2	4
Drawing 201 Mechanical	0	4	Civil Engineering 204 Analytical Mechanics	3	0
English 203 Composition	1	0	Drawing 202 Mechanical	0	2
Mathematics 201 Analytics	1	0	English 204 Composition	1	0
Mathematics 203 Calculus	4	0	Mathematics 204 Calculus	3	0
Physics 203 General	3	2	Military Science 202 Drill Regulations	1	0
			Physics 204 General	3	4
	12	10		13	10

One of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Mod. Lang. 211, 213 or 215 French, German or Spanish	3	0	Mod. Lang. 212, 214 or 216 French, German or Spanish	3	0
Chemistry 207 Quantitative Analysis	1	3	Chemistry 208 Technical Analysis	1	3

OPTION A. GENERAL CIVIL ENGINEERING.

Junior Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 306 Roads and Pavements	3	0
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 308 Roofs and Bridges	3	0
English 301 Argumentation	1	0	Civil Engineering 310 Water Supply Engineering	2	0
Mechanical Engineering 305 Elementary Steam Engineering	3	0	Civil Engineering 312 Hydraulics	2	2
			Electrical Engineering 306 Electrical Machinery	2	3
			English 302 Argumentation	1	0
			Military Science 302 Tactics	1	0
	12	4		16	7

One of the following groups:

		(1)			
Civil Engineering 303 Railroad Construction	3	4	Mechanical Engineering 316 Engineering Laboratory	0	3
Drawing 305 Topographic	0	4			
		(2)			
Civil Engineering 303a Railroad Construction	3	2			
Drawing 307 Topographic	0	2			
Mod. Language 321, 323, 325 French, German or Spanish	2	0	Mod. Language 322, 324, 326 French, German or Spanish	2	0
		(3)			
Civil Engineering 303a Railroad Construction	3	2			
Drawing 307 Topographic	0	2			
History 303 American History and Gov.	2	0	History 304 American History and Gov.	2	0

Summer Work.

Civil Engineering 400. Field practice, four weeks.

Senior Year.

Civil Engineering 401 Railroad Drafting	0	3	Chemistry 406 Geology	3	2
Civil Engineering 403 Roofs and Bridges	2	8	Civil Engineering 402 Sewerage	2	0
Civil Engineering 405 General	0	3	Civil Engineering 404 Bridge Design	0	4
Civil Engineering 407 Masonry	3	0	Civil Engineering 406 General	0	3
Civil Engineering 409 Irrigation and Drainage	2	0	Civil Engineering 408 Higher Structures	3	4
Civil Engineering 413 Reinforced Concrete	2	0	Civil Engineering 410 Contracts and Specifications	2	0
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0			
	14	14		14	13

OPTION B. HIGHWAY ENGINEEERING.

Junior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 308 Roofs and Bridges	3	0
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 310 Water Supply Engineering	2	0
English 301 Argumentation	1	0	Civil Engineering 312 Hydraulics	2	2
Mechanical Engineering 305 Elementary Steam Engineering	3	0	Civil Engineering 322 Rural Highways	3	0
			Electrical Engineering 306 Electrical Machinery	2	3
			English 302 Argumentation	1	0
			Military Science 302 Tactics	1	0
	12	4		16	7

One of the following groups:

		(1)			
Civil Engineering 303 Railroad Construction	3	4	Mechanical Engineering 316 Engineering Laboratory	0	3
Drawing 305 Topographic	0	4			
		(2)			
Civil Engineering 303a Railroad Construction	3	2			
Drawing 307 Topographic	0	2			
Mod. Language 321, 323, 325 French, German or Spanish	2	0	Mod. Language 322, 324, 326 French, German or Spanish	2	0
		(3)			
Civil Engineering 303a Railroad Construction	3	2			
Drawing 307 Topographic	0	2			
History 303 American History and Gov.	2	0	History 304 American History and Gov.	2	0

Summer Work.

Civil Engineering 400. Field practice, four weeks.

Senior Year.

Civil Engineering 407 Masonry	3	0	Chemistry 406 Geology	3	2
Civil Engineering 413 Reinforced Concrete	2	0	Civil Engineering 410 Contracts and Specifications	2	0
Civil Engineering 421 Highway Laws, Economics, Organization	2	0	Civil Engineering 422 Non-Bituminous Pavements	4	0
Civil Engineering 423 Bridge Design	0	6	Civil Engineering 424 Road and Street Systems	2	4
Civil Engineering 425 Road Laboratory	0	2	Civil Engineering 426 Highway Bridges and Culverts	1	4
Civil Engineering 429 Bituminous Materials and Surfaces	5	0	Economics 404 Business Organization	3	0
Economics 403 Fundamental Principles	3	0	English 402 Public Speaking	1	0
English 401 Public Speaking	1	0			
Military Science 401 Tactics	1	0			
	17	8		16	10

OPTION C. MUNICIPAL AND SANITARY ENGINEERING.

Junior Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 306 Roads and Pavements	3	0
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 308 Roofs and Bridges	3	0
English 301 Argumentation	1	0	Civil Engineering 310 Water Supply Engineering	2	0
Mechanical Engineering 305 Elem. Steam Engineering	3	0	Civil Engineering 312 Hydraulics	2	2
			Electrical Engineering 306 Electrical Machinery	2	3
			English 302 Argumentation	1	0
			Military Science 302 Tactics	1	0
	12	4		16	7

One of the following groups:

(1)

Civil Engineering 303 Railroad Construction	3	4			
Chemistry 311 Adv. Quantitative Analysis	1	4	Biology 322 Bacteriology	2	4

(2)

Civil Engineering 303a Railroad Construction	3	2			
Chemistry 307 Quantitative Analysis	1	4	Chemistry 310 Water Analysis	1	2
Mod. Language 321, 323, 325 French, German or Spanish	2	0	Mod. Language 322, 324, 326 French, German or Spanish	2	0

(3)

Civil Engineering 303a Railroad Construction	3	2			
Chemistry 307 Quantitative Analysis	1	4	Chemistry 310 Water Analysis	1	2
History 303 American History and Gov.	2	0	History 304 American History and Gov.	2	0

Summer Work.

Civil Engineering 400. Field practice, four weeks.

Senior Year.

Civil Engineering 407 Masonry	3	0
Civil Engineering 413 Reinforced Concrete	2	2
Civil Engineering 427 Bituminous Materials	4	0
Civil Engineering 423 Bridge Design	0	6
Economics 403 Fundamental Principles	3	0
English 401 Public Speaking	1	0
Military Science 401 Tactics	1	0
	14	8

One of the following:

*Biology 421 Bacteriology	2	4
**Biology 423 Bacterial Analysis	1	6

Chemistry 406 Geology	3	2
Civil Engineering 410 Contracts and Specifications	2	0
Civil Engineering 422 Non-Bituminous Materials	4	0
Civil Engineering 424 Road and Street Systems	2	4
Civil Engineering 428 Sewerage and Filtration	3	4
Economics 404 Business Organization	3	0
English 402 Public Speaking	1	0
	18	10

*For students electing Language or History in the Junior year.
**For students not electing Language or History in the Junior year.

V.—COURSE IN ELECTRICAL ENGINEERING.

Freshman Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
Electrical Engineering 201 Electricity and Magnetism	4	4	Electrical Engineering 202 Electrical Measurements	5	4
English 203 Composition	1	0	English 204 Composition	1	0
Mathematics 201 Analytics	1	0	Mathematics 204 Calculus	3	0
Mathematics 203 Calculus	4	0	Mechanical Engineering 208 Kinematics	3	0
Mechanical Engineering 201 Pattern Making and Foundry	0	4	Military Science 202 Drill Regulations	1	0
Mechanical Engineering 205 Elem. Steam Engineering	3	0	Physics 208 General	2	4
Physics 207 General	2	0			
	15	12		15	10

Junior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Electrical Engineering 302 Direct Currents	5	6	Civil Engineering 316 Mechanics of Materials	4	2
English 301 Argumentation	1	0	Electrical Engineering 304 Problems	0	2
Mechanical Engineering 301 Steam Engines and Boilers	2	0	English 302 Argumentation	1	0
Mechanical Engineering 317 Engineering Mechanics	4	0	Mechanical Engineering 302 Steam Engines and Boilers	3	0
Mechanical Engineering 309 Machine Shop Practice	0	6	Military Science 302 Tactics	1	0
	12	12		9	4

One of the following groups:

(1)

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Civil Engineering 313 Surveying, Leveling	2	2	Electrical Engineering 302 Alternating Currents	5	6
			Economics 306 Business Law	2	0

(2)

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Mod. Lang. 211, 213 or 215 French, German or Spanish	3	0	Mod. Lang. 212, 214 or 216 French, German or Spanish	3	0
			Electrical Engineering 302 Alternating Currents	5	4

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
Electrical Engineering 401 Alternating Current Machinery	3	6	Electrical Engineering 402 Alternating Current Machinery	3	4
Electrical Engineering 403 Electrical Machine Design	3	4	Electrical Engineering 404 Power Plant Design	1	3
English 401 Public Speaking	1	0	Electrical Engineering 406 Power Transmission	2	0
Mechanical Engineering 415 Engineering Laboratory	0	3	Electrical Engineering 408 General Problems	0	2
Military Science 401 Tactics	1	0	English 402 Public Speaking	1	0
Elective	4	0	Mechanical Engineering 416 Engineering Laboratory	0	3
			Elective	4	0
	15	13		14	12

The Electives specified above are to be selected from the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Electrical Engineering 421 General	2	0	Electrical Engineering 422 General	2	0
Electrical Engineering 423 Electrical Railways	2	0	Electrical Engineering 424 Electrical Railways	2	0
Electrical Engineering 425 Illumination	2	0	Electrical Engineering 426 Illumination	2	0
Electrical Engineering 427 Telephony	2	0	Electrical Engineering 428 Telephony	2	0
Electrical Engineering 429 Industrial Applications	2	0	Electrical Engineering 430 Plant Management and Technical Writing	2	0
History 403 American History and Gov.	2	0	History 404 American History and Gov.	2	0
or Mod. Lang. 321, 323, or 325 French, German or Spanish	2	0	or Mod. Lan. 322, 324, or 326 French German or Spanish	2	0

XI.—COURSE IN GENERAL ENGINEERING.

Freshman Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

Sophomore Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 207 Quantitative Analysis	1	4	Civil Engineering 202 Railroad Engineering	2	4
Civil Engineering 201 Plane Surveying	3	4	Civil Engineering 204 Analytical Mechanics	3	0
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
Mathematics 201 Analytics	1	0	Mathematics 104 Calculus	3	0
Mathematics 203 Calculus	4	0	Mechanical Engineering 206 Elem. Steam Engineering	3	0
Physics 203 General	3	2	Military Science 202 Drill Regulations	1	0
			Physics 204 General	3	4
	13	14		16	10

Junior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 305 Mechanics of Materials	4	2	English 302 Argumentation	1	0
English 301 Argumentation	1	0	Military Science 302 Tactics	1	0
Elective	14	0	Elective	18	0
	19	4		20	2

Senior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0	Elective	17	0
Elective	16	0			
	21	0		21	0

ELECTIVES.

Of the electives, not less than seven term-hours must be in each of the departments of Civil, Electrical and Mechanical Engineering. The electives must be chosen under the advice and direction of the Dean of Engineering.

First Term.	Hours per week. Rec.	Pr.
Chemical Engineering 407 Industrial	3	0
Civil Engineering 303 Railroad Construction	3	4
Civil Engineering 311 Hydraulics	2	0
Civil Engineering 401 Railroad Drafting	0	3
Civil Engineering 403 Roofs and Bridges	2	8
Civil Engineering 405 General	0	3
Civil Engineering 407 Masonry	3	0
Civil Engineering 409 Irrigation and Drainage	2	0
Civil Engineering 413 Reinforced Concrete	2	2
Electrical Engineering 301 Direct Currents	5	6
Electrical Engineering 307 Electrical Machinery	3	0
Electrical Engineering 401 Alternating Current Machinery	3	6
Electrical Engineering 403 Electrical Machine Design	3	4
Electrical Engineering 421 General	2	0
Electrical Engineering 423 Electrical Railways	2	0
Electrical Engineering 425 Illumination	2	0
Electrical Engineering 427 Telephony	2	0
Electrical Engineering 429 Industrial Applications	2	0
Mechanical Engineering 301 Engines and Boilers	2	0
Mechanical Engineering 303 Machine Design	0	5
Mechanical Engineering 309 Machine Shop Practice	0	6
Mechanical Engineering 401 Engineering Design	0	4
Mechanical Engineering 403 Engineering Laboratory	0	6
Mechanical Engineering 405 Engineering Design	3	0
Mechanical Engineering 407 Thermodynamics	4	0
Mod. Lan. 211, 213, or 215 French, German or Spanish	3	0
History 303 American History and Gov.	0	0
or Mod. Lan. 321, 323, or 325 French, German or Spanish	2	0

Second Term.	Hours per week. Rec.	Pr.
Chemical Engineering 408 Metallurgy	2	0
Chemistry 406 Geology	3	2
Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 306 Roads and Pavements	3	0
Civil Engineering 310 Water Supply Engineering	2	0
Civil Engineering 312 Hydraulics	2	2
Civil Engineering 322 Rural Highways	3	0
Civil Engineering 402 Sewerage	2	0
Civil Engineering 404 Bridge Design	0	4
Civil Engineering 406 General	0	3
Civil Engineering 408 Higher Structures	3	4
Civil Engineering 410 Contracts and Specifications	2	0
Electrical Engineering 302 Alternating Currents	5	6
Electrical Engineering 304 Problems	0	2
Electrical Engineering 308 Electrical Machinery	3	3
Electrical Engineering 402 Alternating Current Machinery	3	4
Electrical Engineering 404 Power Plant Design	1	3
Electrical Engineering 422 General	2	0
Electrical Engineering 424 Electrical Railways	2	0
Electrical Engineering 426 Illumination	2	0
Electrical Engineering 428 Telephony	2	0
Electrical Engineering 430 Plant Management and Technical Writing	2	0
Mechanical Engineering 302 Engines and Boilers	3	0
Mechanical Engineering 304 Machine Design	0	5
Mechanical Engineering 310 Machine Shop Practice	0	5
Mechanical Engineering 402 Engineering Design	0	4
Mechanical Engineering 404 Engineering Laboratory	0	4
Mechanical Engineering 406 Engineering Design	3	0
Mechanical Engineering 408 Thermodynamics	2	0
Mechanical Engineering 410 Gas Engines	2	0
Mod. Lan. 212, 214, or 216 French, German or Spanish	3	0
or Economics 306 Business Law	2	0
History 304 American History and Gov.	0	0
or Mod. Lan. 322, 324, or 326 French, German or Spanish	2	0

III.—COURSE IN MECHANICAL ENGINEERING.

Freshman Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 207 Quantitative Analysis	1	4	Chemistry 208 Technical Analysis	1	3
Drawing 201 Mechanical	0	4	English 204 Composition	1	0
English 203 Composition	1	0	Mathematics 204 Calculus	3	0
Mathematics 201 Analytics	1	0	Mechanical Engineering 202 Pattern Making and Foundry	0	4
Mathematics 203 Calculus	4	0	Mechanical Engineering 208 Kinematics	3	0
Mechanical Engineering 201 Pattern Making and Foundry	0	4	Mechanical Engineering 210 Kinematic Drawing	0	3
Mechanical Engineering 203 Principles of Manufacture	1	0	Mechanical Engineering 216 Engineering Mechanics	2	
Mechanical Engineering 205 Elem. Steam Engineering	3	0	Military Science 202 Drill Regulations	1	0
Physics 203 General	3	2	Physics 204 General	3	4
	14	14		14	14

Junior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 318 Surveying and Stresses	3	3
Electrical Engineering 307 Electrical Machinery	3	0	Electrical Engineering 308 Electrical Machinery	3	3
Mechanical Engineering 301 Engines and Boilers	2	0	Mechanical Engineering 302 Engines and Boilers	3	0
Mechanical Engineering 303 Machine Design	0	5	Mechanical Engineering 304 Machine Design	0	5
Mechanical Engineering 309 Machine Shop Practice	0	6	Mechanical Engineering 310 Machine Shop Practice	0	5
Mechanical Engineering 317 Engineering Mechanics	3	0	Military Science 302 Tactics	1	0
	12	13		10	16

One of the following groups:

(1)

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
English 301 Argumentation	1	0	English 302 Argumentation	1	0
Mechanical Engineering 311 Seminar	1	0	Mechanical Engineering 312 Seminar	1	0

(2)

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Mod. Lang. 211, 213 or 215 French, German or Spanish	3	0	Mod. Lang. 212, 214 or 216 French, German or Spanish	3	0

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemical Engineering 407 Industrial	3	0	Chemical Engineering 408 Metallurgy	2	0
Civil Engineering 411 Hydraulics	2	0	Civil Engineering 412 Hydraulics	2	2
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Mechanical Engineering 401 Engineering Design	0	4	Mechanical Engineering 402 Engineering Design	0	4
Mechanical Engineering 403 Engineering Laboratory	0	6	Mechanical Engineering 404 Engineering Laboratory	0	4
Mechanical Engineering 405 Engineering Design	3	0	Mechanical Engineering 406 Engineering Design	3	0
Mechanical Engineering 407 Thermodynamics	4	0	Mechanical Engineering 408 Thermodynamics	2	0
Military Science 401 Tactics	1	0	Mechanical Engineering 410 Gas Engines	2	0
	14	10		12	10

One of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
History 403 American History and Gov.	2	0	History 404 American History and Gov.	2	0
Mod. Lang. 321, 323 or 325 French, German or Spanish	2	0	Mod. Lang. 322, 324 or 326 French German or Spanish	2	0

XII.—COURSE IN MILITARY ENGINEERING.

Freshman Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Civil Engineering 201 Surveying, Leveling and Topog.	3	4	Civil Engineering 202 Railroad Engineering	2	4
Drawing 201 Mechanical	0	4	Civil Engineering 204 Analytical Mechanics	3	0
English 203 Composition	1	0	Drawing 202 Mechanical	0	2
Mathematics 201 Analytics	1	0	English 204 Composition	1	0
Mathematics 203 Calculus	4	0	Mathematics 204 Calculus	3	0
Mod. Lang. 211, 213 or 215 French, German or Spanish	3	0	Mod. Lang. 212, 214 or 216 French, German or Spanish	3	0
Military Science 201 Military Hygiene	1	0	Military Science 202 Drill Regulations	1	0
Physics 203 General	3	2	Physics 204 General	3	4
	16	10		16	10

Summer Work.

Six weeks' course in United States Army Students' Military Instruction Camp.

Junior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 303a Railroad Construction	3	2	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 306 Roads and Pavements	3	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 308 Roofs and Bridges	3	0
Drawing 307 Topographic	0	2	Civil Engineering 320 Contracts and Specifications	2	0
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 312 Hydraulics	2	2
English 301 Argumentation	1	0	Electrical Engineering 306 Electrical Machinery	2	3
Mechanical Engineering 305 Elem. Steam Engineering	3	0	English 302 Argumentation	1	0
Mod. Lang. 321, 323, 325 French, German or Spanish	2	0	Military Science 302 Tactics	1	0
			Mod. Lang. 322, 324, 326 French, German or Spanish	2	0
	17	8		18	7

Summer Work.

Civil Engineering 400. Field practice, four weeks.
Six weeks' Course in United States Army Students' Military Instruction Camp.

Senior Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Civil Engineering 403a Roofs and Bridges	2	2	Civil Engineering 402 Sewerage	2	0
Civil Engineering 413 Reinforced Concrete	2	2	Chemistry 406 Geology	3	2
Economics 403 Fundamental Principles	3	0	English 402 Public Speaking	1	0
Economics 407 Elem. and Constitutional Law	4	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	Military Science 402 International and Military Law	4	0
Military Science 401 Tactics	1	0	Military Science 404 Military Field Engineering	4	0
Military Science 403 Military History of U. S.	3	0	Military Science 408 Ordnance and Gunnery	3	0
Military Science 405 Fortifications and Entrenchments	2	0			
Military Science 407 Ordnance and Gunnery	3	0			
	21	4		20	2

VI.—COURSE IN TEXTILE ENGINEERING.

Freshman Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 201 Organic	2	2	Chemistry 202 Organic	2	2
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
Mechanical Engineering 205 Elem. Steam Engineering	3	0	Mechanical Engineering 208 Kinematics	3	0
Mod. Lang. 211, 213 or 215 French, German or Spanish	3	0	Military Science 202 Drill Regulations	1	0
Physics 203 General	3	2	Mod. Lang. 212, 214, or 216 French, German or Spanish	3	0
Textile Engineering 201 Designing	3	2	Physics 204 General	3	4
			Textile Engineering 202 Designing	3	2
	15	10		16	10

Junior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Electrical Engineering 305 Electrical Machinery	2	0	Chemistry 308 Dyeing	2	2
English 301 Argumentation	1	0	Electrical Engineering 306 Electrical Machinery	2	3
Mechanical Engineering 321 Machine Shop Practice	0	6	English 302 Argumentation	1	0
Textile Engineering 301 Yarn Manufacture	4	2	Military Science 302 Tactics	1	0
Textile Engineering 303 Designing	3	0	Textile Engineering 302 Yarn Manufacture	2	2
Textile Engineering 305 Weaving	3	2	Textile Engineering 304 Designing	3	0
Textile Engineering 307 Fabric Analysis	1	0	Textile Engineering 306 Weaving	3	3
	14	10		14	10

One of the following:

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Economics 301 Business Law	2	0	Economics 302 Business Law	2	0
History 303 American History and Gov.	2	0	History 304 American History and Gov.	2	0
Mod. Lang. 321, 323 or 325 French, German or Spanish	2	0	Mod. Lang. 322, 324 or 326 French, German or Spanish	2	0

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 407 Quantitative Analysis	1	4	Chemistry 408 Quantitative Analysis	0	4
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0	Textile Engineering 402 Yarn Manufacture	3	4
Textile Engineering 401 Yarn Manufacture	3	4	Textile Engineering 404 Fabric Analysis	1	0
Textile Engineering 405 Sizing	3	0	Textile Engineering 406 Sizing	3	0
Textile Engineering 407 Weaving	3	4	Textile Engineering 408 Weaving	0	4
			Textile Engineering 410 Mill Management	3	0
			Textile Engineering 412 Magazine Review	1	0
	15	12		15	12

E.—TWO-YEAR COURSE IN ENGINEERING.

First Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Drawing 19 Mechanical	0	4	Drawing 20 Mechanical	0	4
English 21 Practical Composition	3	0	English 22 Practical Composition	3	0
Mathematics 15 Plane Geometry	6	0	Mathematics 16 Algebra	3	0
Mechanical Engineering 35 Elementary	2	2	Mathematics 18 Solid Geometry	3	0
Mechanical Engineering 39 Woodwork	0	4	Mechanical Engineering 36 Elementary	2	2
Physics 11 Elementary	3	2	Mechanical Engineering 40 Ironwork	0	4
			Physics 12 Elementary	3	2
	14	12		14	12

Second Year.

Civil Engineering 51 Graphics	1	3	Civil Engineering 52 Surveying	3	4
Electrical Engineering 51 Applied Electricity	4	4	Electrical Engineering 52 Applied Electricity	4	4
English 53 Rhetoric and Composition	3	0	English 54 Rhetoric and Composition	3	0
Mathematics 53 Trigonometry	3	0	Mechanical Engineering 52 Elementary Mechanics	2	0
Mechanical Engineering 51 Elementary Mechanics	2	0	Mechanical Engineering 76 Power Transmission	3	0
Mechanical Engineering 75 Elementary Steam Engineering	3	0	Mechanical Engineering 78 Machine Shop	0	4
Mechanical Engineering 77 Pattern Making and Foundry	0	4			
	16	11		15	12

F.—TWO-YEAR COURSE FOR ELECTRICIANS.

First Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Drawing 11 Mechanical	0	3	Chemistry 22 Practical	3	2
Drawing 13 Freehand	0	1	Drawing 12 Mechanical	0	3
English 11 Grammar, Composition	3	0	Drawing 14 Freehand	0	1
Electrical Engineering 21 Electricity and Magnetism	3	4	English 12 Grammar, Composition	3	0
Mathematics 13 Shop Mathematics	4	0	Electrical Engineering 22 Direct Currents	3	4
Mechanical Engineering 23 Carpentry	0	4	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 25 Forging	0	4	Mechanical Engineering 32 Elementary Mechanics	2	0
Mechanical Engineering 31 Elementary Mechanics	2	0	Mechanical Engineering 42 Machine Shop Practice	0	6
Mechanical Engineering 47 Pattern Making and Foundry	0	4			
	12	20		14	16

Second Year.

	Rec.	Pr.		Rec.	Pr.
Drawing 51 Mechanical	0	4	Drawing 52 Mechanical	0	4
English 51 Practical Composition	3	0	Electrical Engineering 56 Meters	2	0
Electrical Engineering 55 Alternating Currents	3	0	Electrical Engineering 58 Electrical Machinery	5	0
Electrical Engineering 57 Wiring and Illumination	4	0	Electrical Engineering 62 Electrical Laboratory	0	8
Electrical Engineering 61 Electrical Laboratory	0	8	Electrical Engineering 64 Business Forms	1	0
Mechanical Engineering 65 Engineering Lab. Practice	0	3	Electrical Engineering 66 Engineering Laboratory	0	3
			Mechanical Engineering 70 Power Plant Practice	0	2
	10	15		8	17

One of the following:

Electrical Engineering 59 Telephony	4	0	Electrical Engineering 60 Telephony	4	0
Mechanical Engineering 75 Engines, Valves and Indicators	4	0	Mechanical Engineering 76 Boilers and Power Plants	4	0

G.—TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

First Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Drawing 11 Mechanical	0	3	Chemistry 22 Practical	3	2
Drawing 13 Freehand	0	1	Drawing 12 Mechanical	0	3
English 11 Grammar, Composition	3	0	Drawing 14 Freehand	0	1
Mathematics 13 Shop Mathematics	4	0	English 12 Grammar, Composition	3	0
Mechanical Engineering 23 Carpentry	0	4	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 25 Forging	0	4	Mechanical Engineering 32 Elementary Mechanics	2	0
Mechanical Engineering 31 Elementary Mechanics	2	0	Mechanical Engineering 34 Engineering Laboratory	0	3
Mechanical Engineering 47 Pat. Mkg. and Fdy.	0	4	Mechanical Engineering 42 Machine Shop Practice	0	6
Mechanical Engineering 45 Engines, Valves and Indrs.	4	0	Mechanical Engineering 46 Boilers and Power Plants	4	0
	13	16		15	15

Second Year.

Electrical Engineering 51 Applied Electricity	4	4	Electrical Engineering 52 Applied Electricity	4	4
Mechanical Engineering 53 Technical Literature	2	0	Mechanical Engineering 54 Technical Literature	2	0
Mechanical Engineering 55 General Mech. Engineering	3	0	Mechanical Engineering 56 Pumping Machinery	3	0
Mechanical Engineering 57 Internal Combustion Engines	3	3	Mechanical Engineering 58 Refrigeration	2	0
Mechanical Engineering 59 Machine Design	3	0	Mechanical Engineering 60 Machine Design	3	3
Mechanical Engineering 61 Mach. Shop Practice	0	4	Mechanical Engineering 62 Mach. Shop Practice	0	3
Mechanical Engineering 63 Eng. Lab. Practice	0	3	Mechanical Engineering 64 Eng. Lab. Practice	0	3
			Mechanical Engineering 68 Power Plant Practice	0	4
	15	14		14	17

H.—TWO-YEAR COURSE IN TEXTILE ENGINEERING.

First Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Drawing 11 Mechanical	0	3	Drawing 12 Mechanical	0	3
Drawing 13 Freehand	0	1	Drawing 14 Freehand	0	1
English 11 Grammar, Composition	3	0	English 12 Grammar, Composition	3	0
Mechanical Engineering 23 Carpentry	0	4	Mechanical Engineering 24 Forging	0	4
Textile Engineering 11 Designing	3	0	Textile Engineering 12 Designing	3	0
Textile Engineering 13 Yarn Manufacture	3	2	Textile Engineering 14 Yarn Manufacture	3	4
Textile Engineering 15 Weaving	3	4	Textile Engineering 16 Weaving	3	2
	12	14		12	14

Second Year.

Drawing 51 Mechanical	0	4	Drawing 52 Mechanical	0	4
English 51 Practical Composition	3	0	English 52 Practical Composition	3	0
Mechanical Engineering 77 Wood Turning	0	4	Mechanical Engineering 78 Machine Shop Practice	0	4
Textile Engineering 51 Yarn Manufacture	3	4	Textile Engineering 52 Yarn Manufacture	3	4
Textile Engineering 53 Designing	3	0	Textile Engineering 54 Designing	3	0
Textile Engineering 55 Weaving	3	4	Textile Engineering 56 Weaving	0	4
Textile Engineering 57 Designing	1	0	Textile Engineering 58 Designing	1	0
			Textile Engineering 60 Mill Management	2	0
	13	16		12	16

L.—ONE-YEAR COURSE IN TELEPHONY.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Drawing 11 Mechanical	0	3	Electrical Engineering 24 Telephone Testing	0	4
Drawing 13 Freehand	0	1	Electrical Engineering 26 Telephony	4	4
Electrical Engineering 23 Electricity and Magnetism	5	6	Electrical Engineering 28 Telephone Power Plants	3	0
Electrical Engineering 25 Telephony	4	0	Electrical Engineering 30 Telephone Plant Design	6	8
Mathematics 13 Shop Mathemacics	4	0	Electrical Engineering 32 Spec. and Report Writing	1	0
Physics 11 Elementary	3	2			
	16	12		14	16

DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF AGRICULTURAL EDUCATION.

PROFESSOR HAYES, ASSOCIATE PROFESSOR BLACKWELL.

The demand for skilled teachers of agriculture in high schools, normal schools and colleges makes the work of this department highly interesting to those students who desire to teach. It is universally conceded that knowledge of subject-matter alone is insufficient to insure success in the teaching profession. Opportunity is given the student to anticipate and solve some of the problems of teaching before accepting a position.

Under the laws of Texas, graduates of this College who have completed four "full courses" (equivalent to twenty-four term hours) in education will be granted a permanent State certificate. Those who have completed one "full course" (equivalent to six term hours) in education will be given a first grade State certificate, which is good for four years. Sufficient work is offered in this department to enable a student to secure a permanent State certificate at graduation.

The graduates of agricultural colleges should be leaders in rural betterment. The work of this department will enable the student to appreciate the conditions of rural life and to find means for improvement of those conditions.

Agricultural extension work has had a phenomenal growth in recent years. Not only have universities, colleges, experiment stations and various Federal, State and county institutions engaged in the work of disseminating agricultural information, but railroads and commercial organizations of various kinds are employing experts for extension and demonstration work. The already great demand for capable extension and demonstration workers will increase greatly under the provisions of the Smith-Lever Act. Work is offered in this department that will aid students in the preparation for such positions.

This department is co-operating with numerous high schools, county superintendents, and teachers of agriculture throughout the State, assisting them in the organization of courses of study, the planning of laboratory and field work, and the undertaking of extension work in the community. An effort will be made to visit at least once during the year each high school in the State teaching agriculture. The services of the department are offered to the superintendents, teachers and schools of the State, and school officers are invited to confer with the department in securing teachers of agriculture for high schools.

The courses are as follows:

301. Educational Psychology. Elective. Junior. First term, 3 hours a week.

This is a beginning course in psychology with special emphasis on its application to the problems of teaching. Stress will be placed upon instincts, habit formation, memory, attention, and the psychological principles of industrial subjects in the curriculum. The work will consist of text-book, lectures, assigned readings and reports. The course is strongly advised as a beginning in the study of education.

(Open to students in Courses I, X).

302. Adolescence. Elective. Junior. Second term, 3 hours a week.

This course is a study of the psychology of adolescence, the physical, mental and social changes appearing during adolescence, and the relation of these to the methods, curriculum, discipline, athletics and organization of the high school. As an introduction to this course, a short time will be devoted to a study of the instincts of children and the characteristics of pre-adolescence. The course is designed to enable one to understand the nature of high school boys and girls and to deal intelligently with them. The work consists of text-book, lectures and assigned readings.

Prerequisite, Agricultural Education 301.

(Open to students in Courses I, X).

303. School Administration. Elective. Junior. First term, 3 hours a week.

This course deals with the organization and management of State, county and city school systems; the qualification, duties and relations of school boards, superintendents, principals and teachers; school finances; school architecture and equipment; school curricula; formation, enlargement and consolidation of school districts, including a study of rural conditions of Texas; certification of teachers; and the interpretation and application of the Texas School Law. The course is intended to give a general view of the educative system of the State and nation. It is valuable for general information as well as for preparation to teach and to supervise schools. The work consists of recitations, reports and problems.

(Open to students in Courses I, X).

304. High School Problems. Elective. Junior. Second term, 3 hours a week.

This course is a study of the relation of the high school to elementary school, college and community; reorganization of curriculum with special attention to vocational subjects; equipment; discipline; daily schedules; records, and high school activities. This is a detailed study of the administration of the high school and is intended for those who are preparing to become teachers or principals of high schools.

(Open to students in Courses I, X).

401. Methods of Teaching. Elective. Senior. First term, 3 hours a week.

The fundamental principles of the aims and methods of the recitation are considered with their application to the conditions of the high school. Lesson plans and practice teaching in agriculture and other kindred subjects form an interesting and important part of the course. Students expecting to teach should not fail to take this course. The work consists of recitations, lectures, preparation of teaching plans, and practice teaching.

(Open to students in Courses I, X).

402. High School Agriculture. Elective. Senior. Second term, 3 hours a week.

This course is a study of the specific problems that confront the teacher of agriculture in the high school. Among the topics discussed are: the selection of subject matter suited to local conditions; the organization of courses of study; equipment; management of field plots; student agricultural organizations; extension work; and community interest. The work consists of recitations, lectures, assigned reading and problems. Students expecting to teach agriculture should not fail to take this course.

(Open to students in Courses I, X).

403. Rural Problems. Elective. Senior. First term, 3 hours a week.

This course is a study of the rural community with the school and church as centers of community interest. Among the things discussed are: present rural conditions and their evolution; the demands upon school and church in the country; the reconstruction of the rural school in administration, buildings, equipment, curriculum, maintenance, and teaching; and the co-operation of school, church and community for the uplift of rural life. The course is intended to help prepare for leadership in rural communities and for extension and demonstration work. The work consists of recitations, lectures, and assigned problems.

(Open to students in Courses I, X).

404. Agricultural Extension and Demonstration. Elective. Senior. Second term, 3 hours a week.

This course gives a brief history of the development of extension and demonstration in agricultural work, an account of the types of organization in the various agricultural colleges for extension work, the organization in the U. S. Department of Agriculture for demonstration and extension, the organization under the Smith-Lever Act, other agencies doing extension and demonstration work, the numerous lines of activity in extension and demonstration and the most effective methods to be employed in the work. Lectures, assigned readings, problems and practice in presenting subject-matter to varied audiences constitutes the work of the course. Agricultural Education 301, 305 and 407 are important to give preparation for this course, but they are not prerequisites. The purpose of this course is to give preparation to do extension work in the employ of agricultural colleges, railroads and other private agencies, to do the work of a county demonstration agent, and to do efficient community work as a teacher of agriculture in the high school.

(Open to students in Courses I, X).

405. Vocational Education. Elective. Senior. First term, 3 hours a week.

This course is a brief study of vocational education in general and a more detailed treatment of agricultural education. The progress in the movement for industrial, trade and continuation schools is traced briefly. The history of agricultural education, the organization and methods of the various agencies engaged in agricultural education, agricultural colleges and secondary schools of agriculture, and typical agricultural curricula are studied in as much detail as time will permit. The work is based upon text-book, lectures and reports.

(Open to students in Courses I, X).

DEPARTMENT OF AGRICULTURAL ENGINEERING.

ASSOCIATE PROFESSOR GEE IN CHARGE.

Agricultural Engineering comprises the theory and practice of engineering applied to farm conditions. In this department instruction is given in those subjects which relate especially to tilling, seeding, cultivating and harvesting machinery, farm powers and farm motors, including the installation, use, care and repair of gas engines, steam engines and boilers, windmills, automobiles, motor trucks, pumps, home lighting systems, design of farm buildings, use of concrete on the farm, irrigation and drainage.

These subjects are presented by lectures, recitations, laboratory exercises and practical field demonstrations. The laboratory is equipped with most of the machinery that is used on a modern farm, including several different types of gas and steam engines, tractors and home lighting plants. The shop is supplied with tools sufficient for making repairs on farm machinery and pumps and engines.

The courses are as follows:

301. Farm Machinery. Elective. Junior. First term, 1 hour a week; with practice.

The practical study of all lines of farm machinery, tilling, seeding, cultivating, harvesting and fertilizing machinery.

Practice, 4 hours a week.

Laboratory practice to consist of detailed study of the construction, adjustment, calibration and operation of all lines of farm machinery. Demonstrations and tests to be made under field conditions.

(Open to students in Courses I, X).

302. Repair of Farm Machinery. Elective. Junior. Second term, 1 hour a week; with practice.

The practical method of repair, up-keep, and care of all kinds of farm machinery.

Practice, 4 hours a week.

Laboratory practice to consist of overhauling, repairing and painting of the College farm machinery and the use of repair catalogues, babbit solder, simple wood and iron working tools.

Prerequisite, Agricultural Engineering 301.

(Open to students in Courses I, X).

303. Farm Motors. Elective. Junior. First term, 2 hours a week; with practice.

The practical study of the farm gas and steam engine, use, care and repair.

Practice, 4 hours a week.

Laboratory practice will consist of the operation and construction of the different types of stationary gas and steam engines. Brake, horse power, and fuel economy tests will be run.

(Open to students in Courses I, X).

304. Traction Engines. Elective. Junior. Second term, 1 hour a week; with practice.

The practical study of the care, operation, and handling of both steam and gas tractors.

Practice, 4 hours a week.

Laboratory practice to consist of the practical operation of tractors, making brake and drawbar tests when operating under field conditions; also fuel economy and labor tests will be made.

Prerequisite, Agricultural Engineering 303.

(Open to students in Courses I, X).

305. Dairy and Horticultural Machinery. Elective. Junior. First term, 1 hour a week; with practice.

The practical study of the operation, care and repair of gas engines, steam engines, and boilers, pumps, silage handling and feed grinding machinery. Attention will also be given to pipe fitting, soldering, babbiting and belting.

Practice, 2 hours a week.

(Open to students in Courses I, X).

401. Farm Buildings. Elective. Senior. First term, 1 hour a week; with practice.

The practical study of the plans and design of farm buildings.

Text: Farm Buildings, *Ekblaw.*

Practice, 4 hours a week.

Laboratory practice to consist of designing and drawing up detailed plans of farm buildings.

(Open to students in Courses I, X).

402. Automobiles and Motor Trucks. Elective. Senior. Second term, 1 hour a week; with practice.

The practical study of the care, repair and operation of the modern automobile.

Practice, 4 hours a week.

Laboratory practice to consist of tire patching, valve grinding, care of electric devices, lubrication, driving, repairing, and handling the modern automobile and motor truck.

Prerequisite, Agricultural Engineering 304.

(Open to students in Courses I, X).

403. Concrete on the Farm. Elective. Senior. First term, 1 hour a week; with practice.

The practical study of the use of concrete on the farm.

Practice, 2 hours a week.

Laboratory practice to consist of the design and construction of molds and forms, methods of reinforcing, and proportions of mixture to be used in various farm buildings and farm equipment.

(Open to students in Courses I, X).

404. Irrigation and Drainage. Elective. Senior. Second term, 2 hours a week; with practice.

The practical study of the methods of getting irrigation water to farm crops and the amount of water needed for farm crops. Studies will be made in methods of draining land both by open ditches and tile drains.

Practice, 4 hours a week.

Laboratory practice to consist of laying out and installing a tile drain system, also laying out the plans for an irrigation system. Experiments and tests will be made on the sub-irrigation system which is installed on the College farm.

Prerequisite, Civil Engineering 319.

(Open to students in Courses I, X).

405. Pumping and Power Machinery. Elective. Senior. First term, 1 hour a week; with practice.

The practical study in the installation, operation, care and repair of farm pumps, feed grinders, farm electric and acetylene gas plants, silage cutting machinery. Attention will be given to the design and arrangement of the farm power plant.

Practice, 2 hours a week.

(Open to students in Courses I, X).

406. Research and Thesis. Elective. Senior. Second term, 6 hours a week. Practice.

A course for advanced undergraduates and graduates who are especially interested in solving some Agricultural Engineering problem.

(Open to students in Courses I, X).

11. Irrigation and Drainage. First term, 1 hour a week; with practice.

This course gives the student an elementary knowledge of the different principles of drainage and irrigation and methods of handling drainage and irrigation water.

Text: Agricultural Engineering, *Davidson.*

Practice, 2 hours a week.

The student will be required to lay out different drainage and irrigation systems with precise instruments and will be taught the use of home-made instruments in laying out ditches and the construction of the same.

(Elective in Course D).

13. Farm Machinery and Farm Motors. First term, 2 hours a week; with practice.

This course gives the student a practical knowledge of the machinery and motors that are in use on modern farms.

Recitations and problems.

Text: Agricultural Engineering, *Davidson.*

Practice, 2 hours a week.

The student will study in detail the construction, operation and adjustment of modern farm machinery and farm motors. Demonstrations and tests will be made under field conditions.

(Elective in Course D).

51. Irrigation and Drainage. First term, 1 hour a week; with practice.

Same as course 11.

(Required in Course C).

53. Farm Machinery and Farm Motors. First term, 2 hours a week; with practice.

Same as course 13.

(Required in Course C).

EQUIPMENT.

The department is well equipped with apparatus for lecture and laboratory experiments. Through the generosity of numerous branch houses and manufacturers the laboratory is equipped with all the modern tilling, seeding, harvesting and fertilizing machinery that is in use on the Texas farm. The equipment includes several different types of feed grinders and crushers, seed cleaning and grading machines, centrifugal and piston pumps, hydraulic rams, farm lighting plants. The farm motors laboratory is equipped with twenty different types of stationary gas engines, including Gilson, R. & V., and Kreuger Atlas portable engines, seven different types of traction engines, including a Buckeye traction ditching machine, 50-H.-P. J. I. Case steam traction engine and road grader, two Hart-Parr kerosene tractors, a Bullock 75-H.-P. creeping grip tractor, a Holt caterpillar and a 30-H.-P. H. P. Rumely oil pull; Moline, P. & O., B. F. Avery, John Deere, and Spalding deep tilling engine plows. The laboratory is also equipped with testing instruments such as traction dynamometers, prony brakes, steam and gas engine indicators, planimeters and speed counters. The Studebaker corporation has donated a sectional model of a 35-H.-P. automobile chassis complete with electric starter. The irrigation and drainage laboratory is equipped with levels, ranging poles, rods, tapes, hand axes, pins, etc.; also with spades and drain cleaners for laying out farm drainage and irrigation systems.

DEPARTMENT OF AGRONOMY.

PROFESSOR MORGAN, ASSOCIATE PROFESSORS MCMILLAN, OLSEN,
ASSISTANT PROFESSOR WOOD, MR. YOUNG.

Agronomy comprises the theory and practice of the production of field crops. In this department instruction is given in those subjects which relate especially to the field and its affairs, such as soils, fertilizers and manures, farm crops, seed selection, farm management and plant breeding, crop ecology, etc.

These subjects are presented by means of lectures, recitations, laboratory exercises, collateral readings, farm excursions, etc. To the equipment and facilities which the department possesses for giving this instruction is added the opportunity for contact with the research work of the Experiment Station, especially along the lines of soil fertility and crop production.

The present-day farmer must have a knowledge of the fundamental principles underlying soil management and crop production, regardless of the system of farming to be followed, as these are basic. To produce maximum crops and at the same time keep the soil permanently productive requires both theoretical and practical knowledge. It is the purpose of this department to train the student along both of these lines.

The courses are as follows:

101. Elementary Crop Production. Freshman. First term, 1 hour a week; with practice.

This course gives the student an elementary knowledge of the best practices involved in the production of field crops, including seed selection, the preparation of the seed bed, cultivation, etc. Crop rotation and its value is discussed in an elementary way.

Practice, 2 hours a week.

The practice work in this course comprises an elementary study of the different farm crops, both in the laboratory and field, noting particularly those points that constitute ideal seed plants. When opportunity permits, the improved practices involved in crop production will be studied in the field.

(Required in Course I).

301. Soils. Junior. First term, 3 hours a week; with practice.

This course gives the student a rather comprehensive knowledge of the soil and its management. It is given according to the following outline:

(a) The soil as a medium for root development, including a study of rock and its products; the soil mass, together with the physical properties of the soil and their modification; the organic content of the soil.

(b) The soil as a reservoir for water, including the functions of water in plant growth; the amount of water in the soil; the movement of soil water, and the control of soil water.

(c) Plant nutrients in the soil, including a careful study of both micro-organisms and macro-organisms, as they influence soil productiveness.

(d) The soil air; composition and functions of.

(e) Heat of the soil; comprising a study of the sources, functions and means of modifying soil temperature.

(f) External factors in soil management; tillage, crop adaptation, etc.

Text: Soils, *Lyon & Fippin.*

Practice, 4 hours a week.

The student, working in the laboratory, applies the principles learned in the class room to the actual management of soils.

Prerequisite, Chemistry 101, 102; Physics 101, 102.

(Required in Courses I, X).

302. Farm Crops. Junior. Second term, 4 hours a week; with practice.

In this course, all the leading field crops are studied with regard to structure, composition, races and varieties, breeding or improvement, soils, rotations, fertilizers, together with tillage operations, harvesting and marketing.

Texts: Southern Field Crops, *Duggar;* Forage Plants and their Culture, *Piper.*

Practice, 2 hours a week.

In the laboratory the student makes a careful study of the leading characteristic of the different crops; seeds are studied as regards purity, and other points that determine value.

Prerequisite, Agronomy 301; Biology 301, 302.

(Required in Courses I, X).

304. Soil Mapping. Elective. Junior. Second term, 4 hours a week. Practice.

This course deals with the separation of soil types and phases and mapping them according to the methods used by the Bureau of Soils, United States Department of Agriculture. The work is conducted largely under field conditions, where the student is taught the use of the plane table and map-making.

Prerequisite, Agronomy 301.

(Open to students in Courses I, X).

401. Plant Breeding. Electixe. Senior. First term, 3 hours a week; with practice.

A course dealing with the improvement of field crops. The relative merits and demerits of the various methods applicable to the improvement of our common field crops are considered in detail, such as selecting fluctuating varations, the selection of mutations, the isolation of elementary species and the use of hybridization. The influence of environmental factors on the improvement of crops is also discussed.

Practice, 2 hours a week.

Students will study the different forms of variation, using plants growing in the green-house or that have been selected and mounted for laboratory work. As far as possible practice work will be given in making field selections relative to plant improvement.

Prerequisite, Agronomy 302.

(Open to students in Courses I, X).

402. Farm Management. Senior. Second term, 3 hours a week; with practice.

The application of all the principles taught in the various agricultural subjects to the business management of the farm. Farm problems and farm bookkeeping are featured. Different systems of farming are studied as regards the equipment in land, labor, and capital for each, also crop rotations best suited to the different systems.

Text: Farm Management, *Warren.*

Practice, 4 hours a week.

Practice work comprises a field study of available farms, planning and outlining systems of management best adapted to each. Attention is given to the general lay-out of farm, size and shape of fields, condition of buildings, ditches, roadways, etc., and the necessary improvements are suggested.

Prerequisite, Agronomy 301, 302; Dairy Husbandry 102; Horticulture 201, 202.

(Required in Course I).

403. Cost Accounting. Elective. Senior. First term, 2 hours a week; with practice.

In this course special attention is given to the study of farm inventories, work reports, farm records and methods of keeping farm cost accounts.

Practice, 2 hours a week.

Practice work will include the analysis of farm inventories, the preparation of work reports, keeping cost accounts with single crop and stock enterprises, and the preparation and analysis of at least two complete sets of farm accounts.

(Open to students in Courses I, X).

404. Marketing Problems. Elective. Senior. Second term, 3 hours a week; with practice.

This course deals with special problems pertaining to the marketing of all forms of farm products. Some of the factors considered are the ease, cost and methods of marketing different products; transportation problems; cost of holding products; the relative price of products in different months, and the relation of co-operation and advertising to the solution of marketing problems.

Practice, 2 hours a week.

Statistics of crop production, prices, and crop movement will be tabulated. Crop acreage and condition as a factor determining market quotations will be followed closely. Practice and demonstrations in preparing farm products for market will be given when opportunity permits. Actual marketing conditions at some important marketing center will be studied if arrangements for the trip can be made.

(Open to students in Courses I, X).

405. The Use of Fertilizers and Manures. Elective. Senior. First term, 2 hours a week; with practice.

A thorough course dealing with soil requirements as regards fertilizers; methods of determining the fertilizer needs of soils; correct fertilizer practices with reference to the important field crops; lime and its use on the farm; the care, management and use of barnyard manure, and the use of green manure in soil improvement.

Practice, 2 hours a week.

The fertilizer requirements of various soils for a number of crops will be determined by pot tests. The secondary effects of fertilizers and manures on soils will be studied in the laboratory. When opportunity permits, field excursions will be taken for the purpose of observing farm practices with fertilizers and manures.

Prerequisite, Agronomy 301, 302.

(Open to students in Courses I, X).

406. Advanced Farm Management. Elective. Senior. Second term, 1 hour a week; with practice.

Advanced study of regions, types and methods of farming; discussions of efficiency factors and specific problems on the farms visited in practice.

Practice, 4 hours a week.

Field trips to farms in various regions. Complete data will be collected from which a detailed study of the efficiency of the farm business will be made. At least two all-day trips will be provided for.

Must be accompanied by Agronomy 402.

(Open to students in Courses I, X).

408. Advanced Soils. Elective. Senior. Second term, 2 hours a week; with practice.

This course is intended for the student who wishes to make a specialty of soil study. It deals especially with systems of soil management with reference to permanent soil productiveness. Recent literature bearing on the subject is discussed and the results of some of the leading soil investigations studied.

Practice, 2 hours a week.

In the soils laboratory special fertility problems will be studied.

Prerequisite, Agronomy 301.

(Open to students in Courses I, X).

21, 22. Elementary Agriculture. First year. First and second terms, 3 hours a week; with practice.

This is an elementary course, the object of which is to introduce the student to the field of agriculture as a whole. The farm and its affairs, soils, field and garden crops, farm animals and their care are given elementary consideration.

Text: Beginnings in Agriculture, *Mann.*

Practice, 2 hours a week.

Practice will consist of elementary demonstrations and practicums in soils, crop judging, plant propagation, animal judging, etc.

(Elective in Course D).

23. Soils. First year. First term, 3 hours a week; with practice.

A study of the origin, structure, texture and crop adaptations of agricultural soils. Soil fertility and its maintenance; manures, fertilizers, cover crops, fallowing, fall and spring plowing, crop rotations, diversification and the renovation of worn-out soils will receive attention in their proper order. This course is designed to meet the more practical needs of the two-year student.

Recitations and lectures.

Text: Soils, *Fletcher.*

Practice, 2 hours a week.

Laboratory and field studies on the water-holding capacity of soils, capillarity, the influence of organic matter on the physical properties, lime and its effects, etc.

(Required in Course C; elective in Course D).

24. Crop Production. First year. Second term, 3 hours a week; with practice.

This course will include a rather thorough treatment of all the principal Southern field crops, giving special attention to methods of breeding, preparation of the seed bed, cultivating, harvesting and storing.

Text: Southern Field Crops, *Duggar.*

Practice, 2 hours a week.

A laboratory and field study of the various field crops, noting particularly those points that constitute ideal seed plants. When opportunity permits, the improved practices involved in crop production will be studied in the field.

(Required in Course C).

26. Farm Crops. First year. Second term, 3 hours a week; with practice.

In this course a brief consideration is given to the methods of producing, harvesting and storing all of the principal field and forage crops.

Text: Farm Crops, *Burkett.*

Practice, 2 hours a week.

Judging of various crops and crop products, seed testing, seed selection, and field excursions for studying improved practices involved in crop production.

(Elective in Course D).

52. Farm Equipment and Management. Second year. Second term, 3 hours a week; with practice.

A comprehensive study of the farm from an economic and business standpoint. Such topics as the planning and organizing of the farm with respect to available resources; farm labor; wages; rents and lease systems; contracts; farm accounts; farm advertising and salesmanship; efficiency; and the principal rural problems will be studied.

Text: Farm Management, *Boss.*

Practice, 2 hours a week.

Students will be required to work out a problem consisting of the planning, equipping and managing of a given farm on an ideal plan for a period of several years. Excursions to representative farms, and agricultural surveys will be undertaken as opportunity may permit.

(Required in Course C; elective in Course D).

53. Soils. Second year. First term, 3 hours a week; with practice.

Same as course 23.
(Elective in Course D).

54. Crop Production. Second year. Second term, 3 hours a week; with practice.

Same as course 24.
(Elective in Course D).

56. Farm Crops. Second year. Second term, 3 hours a week; with practice.

Same as course 26.
(Elective in Course D).

DEPARTMENT OF ANIMAL HUSBANDRY.

PROFESSOR BURNS, ASSOCIATE PROFESSORS BELL, BURK, MR. MAGEE, MR. KAZMEIER.

The courses in the Department of Animal Husbandry may be grouped under the four main heads:

(1) The Judging of Live Stock.
(2) The Breeding of Live Stock.
(3) The Feeding of Live Stock.
(4) The Management of Live Stock.

These are arranged to follow each other in proper order so that they may be best understood by the student, and most clearly taught by the instructor. Every effort is made to make every course in Animal Husbandry contribute to the better understanding of the others, and all unite in embracing the subject completely. Special efforts are made in every course to present the useful side, and also to devote as much time as possible to the practices. The courses are designed to give the student a thorough understanding of the live stock business in all its phases and to better fit him for work in this line, whether it be stock farming, ranching, teaching or investigation.

The courses are as follows:

101. Judging Market Types of Cattle and Sheep. Freshman. First term, 4 hours a week. Practice.

The lectures are explanatory of the various classes and grades of cattle and sheep recognized in the leading stock markets. The points of these and their value to stockmen, butcher and consumer are fully discussed. The practice embraces a thorough training in the scoring of fat cattle and fat sheep; supplemented by the study of dressed carcasses as far as possible. In this course lectures are also given on the type and function of the dairy cow and thorough training is given in the scoring of dairy cattle. Comparative judging constitutes an important part of the work.

Text: Judging Live Stock, *Craig.*

(Required in Course I).

102. Judging Market Types of Horses and Swine. Freshman. Second term, 4 hours a week. Practice.

The classes and grades of horses and swine recognized in the leading markets are discussed fully. The distinction of classes, and their importance, is made clear by the further use of the score card. Comparative judging is also an important feature in this course.

(Required in Course I).

104. Farm Poultry. Freshman. Second term, 1 hour a week; with practice.

Lectures are given on the origin, history and classification of the various breeds of poultry. A thorough study is made of poultry feeding and breeding. Houses, yards, diseases, incubation, brooding and marketing of poultry products receive careful consideration. The interests of both the fancier and of the producer of market poultry are kept in mind.

Text: Poultry Production, *Lippincott.*

Practice, 2 hours a week.

Practice is given in feeding mature stock, operating incubators and brooders, judging fancy and utility poultry, constructing houses and equipment, candling and grading eggs, and killing and dressing poultry.

(Required in Course I).

202. Judging Breed Types of Horses, Cattle, Sheep and Swine. Sophomore. Second term, 2 hours a week; with practice.

The lectures in this course treat of the origin, history, characteristics and adaptability of the various breeds of live stock. As far as the equipment in live stock will permit, the student is shown by means of representative animals the best type of the breeds of horses, cattle, sheep and swine.

Text: Types and Breeds of Farm Animals, *Plumb.*

Practice, 2 hours a week.

The score cards of the different breed associations are used in determining the merits of the animals and these are further explained in the lectures. An important part of the practice consists of comparative judging similar to that of the show ring.

Prerequisite, Animal Husbandry 101, 102.

(Required in Course I).

301. History and Development of Breeds. Elective. Junior. First term, 2 hours a week; with practice.

A study of the origin, improvement, adaptability, and characteristics of the important breeds of horses, cattle, sheep and swine. The foundation of the breeds, their subsequent development, and the special breed features and qualities are given full consideration, with the view of acquainting the student with the conditions for which each breed is suited. The text is supplemented by assigned readings.

Text: Types and Breeds of Farm Animals, *Plumb.*

Practice, 2 hours a week.

Practice consists of judging representatives of the various breeds, applying the official standards as adopted by the breed associations.

Prerequisite, Animal Husbandry 202.

(Open to students in Courses I, X).

302. Animal Breeding. Elective. Junior. Second term, 2 hours a week; with practice.

A study of the principles of animal improvement which form the basis of proper selection and mating for the production of pure bred live stock and market animals. The course includes a discussion of the subjects of reproduction, variation, heredity, selection, and the various methods of breeding, which include line breeding, inbreeding, crossing, grading, and other subjects connected with the breeding and improvement of farm animals.

Text: Breeding Farm Animals, *Marshall.*

Practice, 2 hours a week.

Practice consists largely of a study of the results obtained with the various breeds comprising the College herds. Training is given in the use of herd books, which involves the tabulation of pedigrees of representatives of the different breeds.

Prerequisite, Animal Husbandry 301, and Biology 301.

(Open to students in Courses I, X).

401. Animal Nutrition. Elective. Senior. First term, 3 hours a week; with practice.

This subject involves a study of the fundamental principles of live stock feeding, including the composition and digestibility of feed stuffs, the disposition made of the different feed constituents by the animal organism, and, finally, the methods of calculating rations for the various classes of farm animals,—horses, cattle, sheep and swine. Students are required to use a text-book and that is supplemented by lectures.

Text: Feeds and Feeding, *Henry.*

Practice, 2 hours a week.

The practice consists chiefly in calculating rations and in working out problems relating to the economic side of live stock feeding.

Prerequisite, Chemistry 201.

(Open to students in Courses I, X).

402. Live Stock Feeding. Elective. Senior. Second term, 3 hours a week; with practice.

This course treats of the practical application of the principles taught under the subject of animal nutrition. It embraces a thorough study of horse, mule, cattle, sheep, and swine feeding investigations, and of the practical feeding operations of the most successful stockmen with special reference to Texas conditions. Lectures supplement the text in the presentation of the course.

Text: Feeds and Feeding, *Henry.*

Practice, 2 hours a week.

In practice, students are required to keep in close touch with all feeding tests that the Experiment Station has in progress, to make abstracts of Experiment Station bulletins relating to live stock feeding tests of this and other stations, and to gain experience in compounding rations for various purposes from limited selections of feed stuffs.

Prerequisite, Animal Husbandry 401.

(Open to students in Courses I, X).

403. Advanced Judging. Elective. Senior. First term, 1 hour a week; with practice.

The lectures of this course treat further of the most approved types of pure-bred animals and of those used for the common market.

Practice, 4 hours a week.

Classes of the different kinds of live stock are selected as similar as possible to those which come together in the show rings of exhibitions and the work of competitive judging among the students is given much prominence.

Prerequisite, Animal Husbandry 302.
(Open to students in Courses I, X).

404. Live Stock Management. Elective. Senior. Second term, 2 hours a week; with practice.

The raising of horses, cattle, sheep, and swine, as a business, is discussed in full detail, covering all features of management in production and marketing. The management of stock farms and ranches is fully treated. A study is made of the methods used by some of the most successful stock farmers and ranchers of Texas and other States. Special attention is given to the management of pure-bred herds and flocks and to the keeping of private herd and flock records.

Practice, 2 hours a week.

The practice in live stock management consists of actual work in preparing different classes of stock for show and sale. The student is given instruction in trimming sheep, washing and curling the coats of cattle and polishing horns and hoofs. The work on horses consists of grooming, fitting of harness, and decorating manes and tails.

Prerequisite, Animal Husbandry 302, 402.
(Open to students in Courses I, X).

405. Herd Book Study. Elective. Senior. First term, 4 hours a week. Practice.

The first part of the work consists of training in the intelligent use of herd books, involving practice in the tabulation and study of pedigrees of famous animals. This is followed by a study of the blood lines of the breed or breeds of live stock which the student intends to produce, in order to familiarize him with the best strains and individuals of the breed. Practice is also given in the necessary incidentals connected with the registration of animals, such as the rules of entry, applications for transfer, etc.

Prerequisite, Animal Husbandry 302.
(Open to students in Courses I, X).

21. Judging Market Types of Horses, Cattle, Sheep and Swine. First term, 6 hours a week. Practice.

In this course students are given thorough training in scoring and judging market types of horses, cattle, sheep and swine. The points of these and their value to stockmen, butcher and consumer are fully discussed. A study of dressed carcasses is made.

Text: Judging Live Stock, *Craig.*
(Required in Course C).

22. Judging Breed Types of Horses, Cattle, Sheep and Swine. Second term, 2 hours a week; with practice.

A modification of Animal Husbandry 202.
Text: Types and Breeds of Farm Animals, *Plumb.*
Practice, 2 hour a week.
Prerequisite, Animal Husbandry 21.
(Required in Course C).

51. Judging Market Types of Horses, Cattle, Sheep and Swine. First term 6 hours a week. Practice.

Same as course 21.
(Elective in Course D).

52. The Breeding of Live Stock and the Study of Pedigrees. Second term, 1 hour a week; with practice.

The lectures in this course treat of the principles of breeding and the methods used in the practice of breeding horses, cattle, sheep and swine, —pure-bred animals, as well as those for the common market.

Text: Breeding Farm Animals, *Marshall.*

Practice, 2 hours a week.

The practice consists principally of the study of pedigrees. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite, Animal Husbandry 22.

(Required in Course C; elective in Course D).

53. Judging Breed Types of Horses, Cattle, Sheep and Swine. First term, 2 hours a week; with practice.

Same as course 22.
(Elective in Course D).

54. Farm Poultry. Second term, 1 hour a week; with practice.

Same as course 104.
(Elective in Course D).

55. Poultry. Second term, 1 hour a week; with practice.

A modification of Animal Husbandry 104.
Text: Poultry Production, *Lippincott.*
Practice, 2 hours a week.
(Required in Course C).

56. The Feeding of Live Stock. Second term, 2 hours a week; with practice.

This course embraces a study of the feeding of all classes of farm animals, horses, cattle, sheep and swine. The subject of animal nutrition, the composition of available feedstuffs and the calculating of rations, are treated fully.

Text: Feeds and Feeding, *Henry.*

Practice, 2 hours a week.

The practice consists largely of calculating rations for different classes of farm animals, special attention being given to the study of Texas grown feed stuffs.

(Required in Course C; elective in Course D).

DEPARTMENT OF ARCHITECTURE AND ARCHITECTURAL ENGINEERING.

PROFESSOR R. ADELSPERGER.

Every day in theory courses students are required to write quizzes covering some part of the text assigned. The balance of the hour is utilized by the instructor in explaining obscurities or in developing the topic under discussion. In addition related themes, drawings and problems are required from time to time.

In design practice thoroughly practical methods are used. "Design" is admittedly the *crux* of any course in architecture.

To teach it, problems of increasing complexity are given for solution. This is a logical and universal method. Opinions, however, differ over the proper nature of the problems. Some are enthusiastic for the European system in which *projets,* always of a monumental character, are planned with an eye to beauty without regard for cost. Making the broadest generalizations, the tendency of such planning is to concentrate the student's attention upon the *picture* which the building will make, with the consequent development of a gay, graceful and charming exterior at frequent expense to interior utility, economy and convenience. Indeed, the lack of cost-restraint often results in overgaiety, just as unlimited real money does in real life.

This system is not followed here. The College wishes to stand for saner, simpler, more dignified and more useful things in architecture. Accordingly, the programs of the design problems will not continually begin, "A gentleman of wealth" or, "A gentleman of great wealth," but generally will be succinct statements of the accommodations to be put into given buildings on a site of definite size and within a given number of cubic feet, and in compliance with the building laws as defined in the new Underwriters' Code. The problems will be real problems, and the student will be encouraged to solve them in that spirit, and to bring to the solution whatever of dignity and beauty lies within him.

Design problems will be classified as Major and Minor, and students' solutions, if of sufficient merit, will be graded as Passes, Mentions and First Mentions, counting 2, 3 and 4, and ½, ¾ and 1 points, respectively. While the Design courses are catalogued as first and second term practices, promotion from one to another will occur whenever the required points are accumulated, whether that be before or after the term examinations. This statement applies to courses in Architecture 201, 202, 301, 302, 303, 304, 401, 402, 403 and 404.

For purposes of comparison, the following are held to be equivalents:

One hour one year of theory;
Two hours one year of experiment practice, involving written reports;
Three hours one year of design practice, involving some research, and
Four hours one year of shop work or free-hand practice.

The courses in Architecture are as follows:

101, 102. Elements. Freshman. First and second terms, 9 hours a week. Practice.

The correlation of plans, elevations and sections; lettering; mouldings, the orders, architectural elements; conventional rendering; 16 plates in line; 6 in wash.
(Required in Courses VII, IX).

106. Elements of Design. Freshman. Second term, 1 hour a week.

Explanations of the form and proportions of such details as columns, walls, windows, doors, cornices, and roofs; their proper grouping and arrangement.
Daily quarter-hour written quizzes, tracings, short themes, lectures.
Text: American Vignola, *Ware.*
(Required in Courses VII, IX).

201. Design. Sophomore. First term, 12 hours a week. Practice.

Tracings and simple order problems involving elementary composition; 8 points required.
Prerequisite, Architecture 101, 102, 106.
(Required in Courses VII, IX).

202. Design. Sophomore. Second term, 12 hours a week. Practice.

Order problems of greater complexity. Elementary design problems; 8 points required.
Prerequisite, Architecture 201.
(Required in Courses VII, IX).

205, 206. Carpentry. Sophomore. First term, 2 hours a week, second term, 3 hours a week.

Woods, lumber, woodworking, framing, finishing, interior details. Hardware, paint and varnish. Roofings.
Daily quarter-hour written quizzes; tracings; lectures.
Texts: Building Construction, Part 2, *Kidder;* Paint and Varnish Catechisms, *Heckel.*
(Required in Courses VII, IX).

207, 208. History of Architecture. Sophomore. First and second terms, 2 hours a week.

Egyptian, Western Asiatic, Greek, Roman, Early Christian, Byzantine, Romanesque and Gothic styles.
Daily quarter-hour written quizzes; tracings; research; lectures.
Text: A History of Architecture, *Fletcher-Fletcher.*
(Required in Courses VII, IX).

209. Theory of Design. Sophomore. First term, 1 hour a week.

The underlying principles of pleasing composition.
Daily quarter-hour quizzes; research; lectures.
Text: Architectural Composition, *Robinson.*
(Required in Courses VII, IX).

301. Design. Junior. First term, 15 hours a week. Practice.

Tracings, sketches and design problems; 8 points required.
Prerequisite, Architecture 202.
(Required in Course IX).

302. Design. Junior. Second term, 15 hours a week. Practice.

Working drawings, archæology and design problems of greater difficulty; 8 points required.
Prerequisite, Architecture 301.
(Required in Course IX).

303. Structural Design. Junior. First term, 12 hours a week. Practice.

Tracings, sketches, and mill factory design; 8 points required.
Prerequisite, Architecture 202.
(Required in Course VII).

304. Structural Design. Junior. Second term, 12 hours a week. Practice.

Working drawings, mill construction and advanced masonry design; foundations; 8 points required.
Prerequisite, Architecture 303.
(Required in Course VII).

305. Masonry. Junior. First term, 3 hours a week.

Materials and methods of construction in brick, stone and concrete; foundations; plastering.

Daily quarter-hour written quizzes, tracings, sketches, experiments; lectures.

Text: Building Construction, Part I, *Kidder.*
(Required in Courses VII, IX).

306. Steel Construction. Junior. Second term, 2 hours a week.

Skeleton framing in steel, designing of sections, fire-proofing.

Daily quarter-hour written quizzes, tracings, problems; lectures.

Texts: Building Construction, Part I, *Kidder;* Pocket Companion, *Carnegie Steel Co.*
Prerequisite, Architecture 305.
(Required in Courses VII, IX).

307. Plumbing. Junior. First term, 2 hours a week.

Water supply, sewage disposal, plumbing, housing conditions.

Daily quarter-hour written quizzes, tracings, lectures.

Texts: Principles and Practices of Plumbing, *Cosgrove;* Handbook on Sanitation, *Price.*
(Required in Courses VII, IX).

308. Heating and Ventilation. Junior. Second term, 2 hours a week.

Direct and indirect methods of heating by steam and hot water. Furnace heating. Plenum and vacuum fans.

Daily quarter-hour written quizzes, tracings, problems; lectures.
Text: Heating and Ventilation, *Hubbard.*
(Required in Courses VII, IX).

309. History of Architecture. Junior. First term, 2 hours a week.

Renaissance, Indian, Chinese, Japanese and Sarcenic styles. Modern architecture.
Daily quarter-hour written quizzes, tracings, research; lectures.
Text: A History of Architecture, *Fletcher-Fletcher.*
Prerequisite, Architecture 207, 208.
(Required in Courses VII, IX).

310. Historic Ornament. Junior. Second term, 2 hours a week.

Ornament and its applications to objects of art and in architecture.
Daily quarter-hour written quizzes, tracings, color sketches, research; lectures.
Text: A Manual of Historic Ornament, *Glazier.*
Prerequisite, Architecture 309.
(Required in Course IX).

401. Design. Senior. First term, 15 hours a week. Practice.

Advanced archæology and design problems; 8 points required.
Prerequisite, Architecture 302.
(Required in Course IX).

402. Design. Senior. Second term, 24 hours a week. Practice.

Municipal planning and monumental design problems; thesis design; 12 points required.
Prerequisite, Architecture 401.
(Required in Course IX).

403. Structural Design. Senior. First term, 15 hours a week. Practice.

Industrial developments in steel and reinforced concrete; 8 points required.
Prerequisite, Architecture 304.
(Required in Course VII).

404. Structural Design. Senior. Second term, 15 hours a week. Practice.

Skeleton construction. Structural thesis.
Prerequisite, Architecture 403.
(Required in Course VII).

NOTE.—With the approval of the Head of the Department, students in courses 402 and 404 may collaborate in thesis design.

405. History of Sculpture. Senior. First term, 1 hour a week.

Ancient and modern sculpture, especially as a coherent element of architectural composition.
Daily quarter-hour written quizzes, tracings, sketches; lectures.
Text: History of Sculpture, *Marquand and Frothingham.*
(Required in Course IX).

406. History of Painting. Senior. Second term, 2 hours a week.

Modern painting and mural decoration.
Daily quarter-hour written quizzes, color sketches; lectures.
Text: A History of Painting, *Van Dyke.*
(Required in Course IX).

408. Business Practice. Senior. Second term, 2 hours a week.

Office management. Specifications. Contracts. Ethical conduct.
Daily quarter-hour written quizzes; lectures.
Text: The Law of Contracts, *Wait;* Documents of the American Institute of Architects.
(Required in Courses VII, IX).

409. Fire Prevention Engineering. Senior. First term, 2 hours a week.

Insurance surveys, remedial construction, fire and life hazards and preventive measures.
Daily quarter-hour written quizzes, problems; lectures.
Text: Documents of the National Fire Prevention Association.
Prerequisite, all construction courses scheduled in Sophomore and Junior years.

410. Building Codes. Senior. Second term, 2 hours a week.

Organization of Building Commissioners' offices, duties of inspectors, comparison of codes.
Daily quarter-hour written quizzes, inspection; lectures.
Text: The Underwriters' Code, *Woolson.*
Prerequisite, Arichitecture 409.
(Elective in Course VII).

EQUIPMENT.

The department has a fair library of valuable books, several thousand plates in ring books, a lantern and slides, and a number of well chosen casts—to all of which additions constantly are being made. Students of architecture have, of course, access to the equipment of other departments in which they are taking work.

DEPARTMENT OF BIOLOGY.

PROFESSOR BALL, ASSISTANT PROFESSOR HAYDEN, MR. CASSIDAY, MR. REED, DR. EHLERS.

The work of this department is designed to furnish the student with that accurate and thorough knowledge of the structure and functions of plants and of animals which is essential for those who purpose engaging in the arts of agriculture and horticulture.

Instruction is given by lecture and text, but especial emphasis is laid upon the work of the laboratory, where every effort is made to induce in the student habits of independent observation and thought.

The courses are as follows:

101, 102. Economic Botany. Freshman. First and second terms, 2 hours a week; with practice.

The morphology and systematic relations of plants are studied in this course, which begins with an outline of the external and internal form and structure necessary to the more extended work in the physiology of the plant. The second term is devoted to systematic and ecologic botany in which the student is trained to identify plants, using as a basis his knowledge of their structure, and to apply both structure and function in accounting for their life relationships. Especial attention is given to plants of economic importance.

Texts: Text-book of Botany, *Coulter, Barnes and Cowles;* Flora of the Southern States, *Chapman.*

Practice, 2 hours a week.

The laboratory work is planned to illustrate the lectures, but more especially to train the student to acquire facts of structure and function by direct observation. In order to insure careful and correct interpretation of what is seen, each student is required to keep a notebook in which he records by drawings and notes the results of his work.

(Required in Course I).

103, 104. General Botany. Freshman. First and second terms, 3 hours a week; with practice.

This course is designed to give a broader and deeper insight into the structure and physiology of the plant than the preceding. The first term will be devoted largely to physiology, the second to morphology and taxonomy.

Text: A Text-book of Botany, *Strasburger.*

Practice, 2 hours a week. First term, experimental plant physiology. Second term, plant structure. In both, a notebook containing accurate recording of observations will be required.

(Required in Course X).

201, 202. General Zoology. Sophomore. First and second terms, 2 hours a week; with practice.

This course offers a general survey of the animal kingdom, beginning with the lowest forms of animal life. The structure and physiology of types from the various groups will be considered, together with the principles of classification. Some attention also will be given to the development and distribution of animals.

Text: College Zoology, *Hegner.*

Practice, 2 hours a week.

Careful dissection and study of types selected from the various groups, with notes and drawings, will be made in the laboratory.

(Required in Courses I, X).

205. Agricultural Bacteriology. Sophomore. First term, 2 hours a week; with practice.

In this course the relations of bacteria to agricultural pursuits are examined; their activities in soil-building, dairy processes, various fermentations, such as of silage, curing and manufacture of farm products, etc.

Text: General Bacteriology, *Frost and McCampbell.*

Practice, 4 hours a week.

Preparation of culture media, of pure cultures, staining and microscopical technique; methods of identification, etc., occupy the time allotted.

Manual, Laboratory Bacteriology, *Moore.*

(Required in Course I).

301. Embryology of the Domestic Animals. Elective. Junior. First term, 2 hours a week; with practice.

This course begins with a study of cell division and of the origin of the spermatozoon and of the egg-cell. The process of fertilization is then taken up, followed by a study of the development of the embryo of the bird and of the mammal.

Text: Introduction to Vertebrate Embryology, *Reese.*

Practice, 4 hours a week.

Practice in this course consists of a study of the cell, with especial relation to the phenomena of division and maturation; of the egg of the chicken in its course of development, and of the development of the pig embryo.

Manual, Laboratory Outlines for Embryology, *Harman.*

(Open to students in Courses I, X).

302. Rural Sanitation. Elective. Junior. Second term, 2 hours a week; with practice.

This course presents an outline of the relation of bacteria to everyday life, at home and on the farm. The rationale of sanitation in and about the home; the construction and operation of sewage disposal plants suitable for use in villages and in the country; the relations of bacteria, insects and vermin to the health of man and animals are carefully considered.

Text: Rural Hygiene, *Brewer.*

Practice, 4 hours a week.

Laboratory study of bacteria and of their activities; methods of disinfection, etc.

(Open to students in Courses I, X).

303. Plant Physiology. Elective. Junior. First term, 2 hours a week; with practice.

An advanced course in physiology is here offered in which the functions of respiration, assimilation and nutrition receive especial attention. The course is designed for those who wish to pursue work of higher character in the field of general agricultural botany and at the same time to give, in the practical work, an introduction to the methods of research.

Text: Vegetable Physiology, *Green.*

Practice, 4 hours a week.

Laboratory manual, Practical Physiology of Plants, *Darwin & Acton.*

(Open to students in Courses I, X).

304. Plant Ecology. Elective. Junior. Second term, 2 hours a week; with practice.

In this course plants are studied in their relation to environment. Especial attention will be placed upon the more important stimuli of temperature, moisture, and light, and upon the method in which the plant adapts itself to meet changed conditions in each of these.

Text: Plant Physiology and Ecology, *Clements.*

Practice, 4 hours a week.

Practice will consist of laboratory and field studies of the growing plant and of its relation to environment.

(Open to students in Courses I, X).

322. Sanitary Bacteriology. Junior. Second term, 2 hours a week; with practice.

The relations of bacteria and similar organisms to water and water supply are carefully considered, with especial reference to the public health.

Text: Elements of Water Bacteriology, *Prescott and Winslow.*

Practice, 4 hours a week.

Preparation of special culture media; qualitative and quantitative analyses of water.

(Required in Course IV, option C).

401. Dairy Bacteriology. Elective. Senior. First term, 2 hours a week; with practice.

Designed for students specializing in dairy husbandry. The general nature and relations of the bacteria directly related to changes in milk and other dairy products are considered. Dairy hygiene and sanitation receive especial attention.

Text: Practical Dairy Bacteriology, *Conn.*

Practice, 4 hours a week.

Preparation of special media; technique of dairy bacteriology; analysis of milk, cream, etc.

Manual, Outlines of Dairy Bacteriology, *Russell and Hastings.*

(Open to students in Courses I, X).

402. Soil Bacteriology. Elective. Senior. Second term, 2 hours a week; with practice.

In this course the nature and relation of bacteria to agricultural pursuits are carefully considered, especially as regards their activities in soil-building; fermentations, curing of farm products, etc.

Text: Agricultural Bacteriology, *John Percival.*

Practice, 4 hours a week.

Preparation of special culture media; study of ammonification; nitrification, denitrification, etc.

Manual, A Manual of Bacteriology, *Reed.*

(Open to students in Courses I, X).

403, 404. Plant Diseases. Elective. Senior. First and second terms, 2 hours a week; with practice.

The structure, physiology and classification of fungi are studied in the first term; in the second, types of the most important plant diseases occurring in the State are selected for study and the student is trained to identify the cause of the trouble and is shown the methods of spraying and of other corrective measures. Plant diseases due to other causes receive attention within the limits of time and material.

Text: Fungus Diseases of Plants, *Duggar.*

Practice, 4 hours a week.

In the first term the student will become acquainted with the form and structure of selected fungi, and will learn the routine methods of cultivation, experimentation, etc. In the second term, diseased plants are placed before him, and he is instructed in the diagnosis of each with its appropriate treatment.

(Open to students in Courses I, X).

421. Sanitary Bacteriology. Senior. First term, 2 hours a week; with practice.

The bacteriology of sewage; sewage management and disposal; sanitary appliances, public and private, are thoroughly considered.

Text: Sewage Disposal, *Kinnicutt-Winslow, and Pratt.*

Practice, 4 hours a week.

(Required in Course IV, option C, of students not electing language).

423. General Bacteriology of Water and Sewage. Senior. First term, 1 hour a week; with practice.

This course is designed for engineering students who desire more elementary instruction in sanitary bacteriology, but who, at the same time, wish to gain a working knowledge of the methods of bacterial analyses and their practical applications.

Text: Water Supply, *Mason.*

Practice, 6 hours a week.

Technical operations; methods of analyses of water and sewage; applications to public and private health, etc.

Laboratory manual, Microscopy of Water, *Whipple.*

(Required in Course IV, option C, of students electing language or history).

11. Economic Zoology. First year. First term, 3 hours a week; with practice.

A study of the familiar forms of animal life, with especial reference to those directly related to agriculture.

Text: General Zoology, *Linville and Kelly.*

Practice, 2 hours a week.

The laboratory work consists of the dissection of a few familiar forms, together with observations of their physiology and mode of life.

(Required in Course C; elective in Course D).

(Not to be given in 1915-16).

12. Economic Botany. First year. Second term, 3 hours a week; with practice.

Students in this course are offered work designed to present a clear outline of the fundamental facts of plant life upon which the intelligent handling and care of farm crops are based. The term opens with a study of the plant as a whole and this leads to the systematic and ecologic relationships especially of those used as cultivated crops.

Text: A Practical Course in Botany, *Andrews.*

Practice, 2 hours a week.

The student is required to work out for himself and to make notes upon the structure of the plant and to use this knowledge in the systematic study of selected plants.

(Required in Course C; elective in Course D).

(Not to be given in 1915-16).

13, 14. General Zoology. First year. First and second terms, 3 hours a week; with practice.

A secondary course in zoology, offering a rather extended study of the animal kingdom, and of the phenomena of animal life. In the second term, domestic animals will receive especial attention.

Text: To be assigned.

Practice, 2 hours a week. The laboratory work will be similar to that of course 11, but will embrace a larger number of forms.

(Required in Course C; elective in Course D).

51. Economic Zoology. Second year. First term, 3 hours a week; with practice.

Same as course 11.

(Elective in Course D).

(Not to be given in 1915-16).

52. Economic Botany. Second year. Second term, 3 hours a week; with practice.

Same as course 12.

(Elective in Course D).

(Not to be given in 1915-16).

53, 54. Economic Botany. Second year. First and second terms, 2 hours a week; with practice.

Same as course 101, 102.

(Elective in Course D).

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

CHEMISTRY.

PROFESSOR HEDGES, ASSISTANT PROFESSORS GORDON, NELSON, MR. THORNTON, MR. PARMELEE, MR. BRYANT.

Most of the work in this department is given by lectures, illustrated by experiments, and supplemented by laboratory work, with frequent oral and written quizzes. A broad foundation is laid in the beginning course in General Inorganic Chemistry, which extends through the Freshman year in all four-year Courses.

The courses in Chemistry are as follows:

101, 102. General Inorganic Chemistry. Freshman. First and second terms, 3 hours a week; with practice.

In this course the foundation principles of all chemical activity are fully discussed and demonstrated. The chemical elements and their compounds are then taken up separately and systematically. Industrial applications of the more important chemical processes are briefly described, and organic chemistry is touched upon. This course must precede all other chemical studies. An elementary course in physics should precede or accompany this course.

Text: A Course in General Chemistry, *McPherson and Henderson.*

Practice, 2 hours a week.

General laboratory work, duplication of lecture experiments, qualitative analysis, simple tests of technical importance.

Text: Exercises in Chemistry, *McPherson and Henderson.*

(Required in all four-year engineering Courses).

201. Organic Chemistry. Sophomore. First term, 2 hours a week; with practice.

This course is designed to meet the requirements of students in agriculture. The general principles of organic chemistry are first considered, then a systematic study of the substances found in connection with plant and animal life is made.

Text: Organic Chemistry, *Moore.*

Practice, 2 hours a week.

In the laboratory the student prepares a number of typical organic compounds and makes some determination of their physical constants.

Prerequisite, Chemistry 101, 102.

(Required in Courses I, VI).

202. Organic Chemistry. Sophomore. Second term, 2 hours a week; with practice.

A continuation of Chemistry 201, with a special consideration of the application of organic chemistry to dyes.

Text: Organic Chemistry, *Moore.*

Practice, 2 hours a week.
Preparation and properties of dyes.
Prerequisite, Chemistry 201.
(Required in Course VI).

203, 204. Organic Chemistry. Sophomore. First and second terms, 3 hours a week; with practice.

In this course the general principles and theories of organic chemistry, together with the general methods of preparation and synthesis of organic compounds, are treated in detail. Special attention is given to compounds of technical importance, thus laying a foundation for work in dyeing, in agricultural chemistry, in sanitary chemistry, and in many processes of industrial chemistry. Lectures.

Text: Organic Chemistry, *Moore.*
Practice, first term, 4 hours; second term, 2 hours a week.
Preparation and properties of organic compounds.
Prerequisite, Chemistry 101, 102.
(Required in Course X).

205. Qualitative Analysis. Sophomore. First term, 2 hours a week; with practice.

This course includes both the theory and practice of fundamental analytical operations and is designed to enable the student to make a rapid and accurate analysis of substances of average complexity, and to understand the steps by which his results are obtained. In theory the principles upon which the laboratory work is based are explained and discussed, and the student's knowledge rigorously tested by oral and written exercises.

Practice, 8 hours a week.

The laboratory work consists of a study of the properties and reactions of the more common basic and acidic radicals, their separation and identification from mixtures, the methods of getting solids into solution for analysis and the analysis of unknown substances. The number of substances analyzed varies with their nature and complexity.

Prerequisite, Chemistry 101, 102.
(Required in Course VIII).

206. Geology. Sophomore. Second term, 2 hours a week; with practice.

This course deals primarily with dynamical, and structural geology, but historical geology is briefly considered. Special attention is given to the weathering of rocks and minerals and its significance in the formation of soils.

Text: Introduction to Geology, *Scott.*
Practice, 2 hours a week.

The laboratory work will include the identification of the more common minerals and rocks.

Text: Tables for the Identification of the Common Minerals, *Crosby.*
Prerequisite, Chemistry 201.
(Required in Courses I, X).

207. Quantitative Analysis. Sophomore. First term, 1 hour a week; with practice.

This course is designed to meet the requirements of civil, mechanical and textile engineering students, and is preparatory to advanced courses in those departments. The laboratory exercises are explained in detail, general deductions drawn, and the student's knowledge of the subject tested by short oral and written exercises. A considerable portion of the class-room time is devoted to chemical calculations involved in the practice.

Practice, 4 hours a week.

The laboratory work consists of a number of carefully selected experiments in quantitative analysis designed to typify operations of general application.

Prerequisite, Chemistry 101, 102.

(Required in Courses III, IV, XI).

208. Technical Analysis. Sophomore. Second term, 1 hour a week; with practice.

This course is designed to give, to students of civil and mechanical engineering, an insight into the methods employed in the analysis of materials connected with their professions, and the application of the results obtained to practical problems. The work in the laboratory is discussed and explained, and its application to engineering problems emphasized.

Practice, 3 hours a week.

In the laboratory fuels, steels, cements, waters for industrial purposes, and industrial products that are commonly met with, are analyzed, by rapid technical methods. The assignment varies according to the Course the individual student or the class is pursuing.

Prerequisite, Chemistry 207.

(Required in Courses III, IV).

302. Agricultural Chemistry. Junior. Second term, 2 hours a week; with practice.

This is a study of the fundamental chemical principles of agriculture, and in addition to giving the student a grasp of the application of chemistry it helps to understand the chemical terms used in Experiment Station literature. The chemistry of plant substances, soils, irrigation water, fertilizers, insecticides, and fugicides is studied.

Practice, 2 hours a week.

The laboratory work serves to familiarize the student with the composition and behavior in the laboratory of many materials important in agriculture. It consists of the chemical analysis of soils, fertilizers, insecticides and fungicides.

Prerequisite, Chemistry 309.

(Required in Courses I, X).

303, 304. Organic Chemistry. Junior. First and second terms, 3 hours a week; with practice.

Same as course 203, 204.

(Required in Course VIII).

305. History of Chemistry. Junior. First term, 1 hour a week.

This course puts the development of chemical theories in their historical setting and gives an intimate acquaintance with the lives of great chemists.

Prerequisite, Chemistry 101, 102.

(Required in Course VIII; open to students in Courses I, X).

306. Geology. Junior. Second term, 3 hours a week; with practice.

This course consists of a study of dynamical, structural, and economic geology, with special emphasis on the non-metallic minerals. Considerable attention is given to the weathering of rocks and minerals.

Text: Engineering Geology, *Ries and Watson.*

Practice, 2 hours a week.

The laboratory work will include the identification of thirty of the common rocks and thirty minerals, and special tests of non-metallic minerals having economic value.

Text: Tables for the Determination of the Common Minerals, *Crosby.*

Must be preceded or accompanied by Chemical Engineering 302.

(Required in Course VIII).

307. Quantitative Analysis. Junior. First term, 1 hour a week; with practice.

Same as course 207.

(Required in Course IV, option C).

308. Dyeing. Junior. Second term, 2 hours a week; with practice.

This course consists of a study of the physical and chemical properties of textile fibers, dyes, dyestuffs, and mordants, together with the principles and appliances involved in the commercial coloring of textiles, especially cotton and woolen goods.

Practice, 2 hours a week.

All the principles discussed in the theory are tested in the laboratory, with especial attention to the production of dyeing to meet particular commercial requirements.

Prerequisite, Chemistry 202.

(Required in Course VI).

309. Analytical Chemistry. Junior. First term, 1 hour a week; with practice.

This course is designed to prepare the students of agriculture for the work in agricultural chemistry. The preparation of standard solutions and the principles of quantitative analysis are discussed.

Practice, 4 hours a week.

The laboratory work consists of the preparation of standard solutions, and the analysis of different materials as vinegar, limestone, and feedstuffs.

Prerequisite, Chemistry 201.

(Required in Courses I, X).

310. Water Analysis. Junior. Second term, 4 hours a week. Practice.

This course is designed to impart a knowledge of the methods employed in the analysis of waters for industrial and potable purposes, of the interpretation of the results of such analyses, and of the methods employed in water purification. Attention is also directed to the nature and analysis of sewage, and its purification.

Prerequisite, Chemistry 307.

(Required in Course IV, option C).

311. Advanced Quantitative Analysis. Junior. First term, 1 hour a week; with practice.

This course is a continuation of Chemistry 208 with special emphasis on the interpretation of water and sewage analysis, methods of purification, and calculation of problems based on laboratory practice.

Practice, 4 hours a week.

The laboratory work consists of the analysis of water from a sanitary standpoint and the testing of materials employed in sanitary operations.

Prerequisite, Chemistry 208.

(Required in Course IV, option C).

321. Physical Chemistry. Elective. Junior. First term, 2 hours a week; with practice.

This is an elementary course, emphasizing the phenomena which show the state of gaseous and dissolved substances.

Practice, 4 hours a week.

Molecular weight determinations by vapor-density and freezing-point methods; heat of reaction; electrical conductivity; and electro-chemical preparations.

Prerequisite, Chemistry 201.

(Open to students in Courses I, X).

322. Qualitative and Quantitative Analysis. Elective. Junior. Second term, 1 hour a week; with practice.

This course is designed to familiarize the student with the fundamental principles of qualitative analysis along with advance work in quantitative analysis. In theory the principles upon which the laboratory work is based are explained and discussed, and the student's knowledge of the subject tested by short oral and written exercises.

Practice, 6 hours a week.

The laboratory work consists of qualitative analysis and a number of carefully selected experiments in quantitative analysis.

Prerequisite, Chemistry 309.

(Open to students in Courses I, X).

406. Geology. Senior. Second term, 3 hours a week; with practice.

Same as course 306.

(Required in Courses IV, VII, XII; elective in Course XI).

407. Quantitative Analysis. Senior. First term, 1 hour a week; with practice.

Same as course 207.

(Required in Course VI; open to students in Courses I, X).

408. Quantitative Analysis. Senior. Second term, 4 hours a week. Practice.

This course is designed to familiarize students in textile engineering with the methods employed in the analysis of size compounds, and with the properties of the various substances they contain. In the early part of this course experiments are conducted to test the purity of the substances usually incorporated in sizes, and later analyses are performed on typical sizes and the purity of the constituents determined.

Text: The Chemistry and Practice of Sizing, *Percy Bean.*

Prerequisite, Chemistry 407.

(Required in Course VI).

421. Advanced Agricultural Analysis. Elective. Senior. First term, 2 hours a week; with practice.

In this work the methods of exact analysis are discussed and the chemistry of every step explained. It supplies a basis for the work in advanced agricultural chemistry.

Practice, 8 hours a week.

The official methods of analysis are used throughout the work; but other methods are frequently used for comparison.

Prerequisite, Chemistry 302, 322.

(Open to students in Courses I, X).

422. Advanced Agricultural Chemistry. Elective. Senior. Second term, 2 hours a week; with practice.

Studies are made of selected topics concerning the chemistry of soils, plants, or animal nutrition, in such a way as to give the student a knowledge of the methods used in agricultural investigation, and to aid him to develop habits of independent thought.

Practice, 8 hours a week.

The student is required in this work to take up some special problem in agricultural chemistry or to work on some chemical phase of some problem simultaneously pursued in some other department.

Prerequisite, Chemistry 421.

(Open to students in Courses I, X).

424. Dairy Chemistry. Elective. Senior. Second term, 2 hours a week; with practice.

The object of this course is to study the composition of milk and the principal chemical changes that take place in the handling of it, and in its manufacture into butter and cheese.

Practice, 4 hours a week.

The laboratory work consists in the analysis of milk, butter, oleomargarine, and cheese, and the testing for adulterants.

Prerequisite, Chemistry 302.

(Open to students in Courses I, X).

22. Practical Chemistry. Second term, 3 hours a week; with practice.

The course is intended to familiarize the engineering student with chemistry and its relation to daily life. The elementary principles of inorganic chemistry are first considered. This is followed by a brief study of the composition and relation of chemistry to the following materials: Carbon and its compounds, glass, cement, alloys, paints, oils, varnishes, leather, silk, wool, cotton, rubber, soils, fertilizers and insecticides.

Text: Chemistry and Its Relation to Daily Life, *Kahlenberg and Hart.*

Practice, 2 hours a week.

Preparation and testing of materials discussed in the theory.

(Required in Courses F, G).

51. Practical. First term, 3 hours a week; with practice.

This course is intended to familiarize the students of agriculture with the facts underlying the more important chemical processes involved in agricultural operations, such as fertility of soils, plant growth, fertilizers, and the digestibility of feeds. The elementary principles of inorganic chemistry are first considered.

Practice, 2 hours a week.

Most of the principles discussed in the theory are confirmed by the student in the laboratory.

(Elective in Course D).

EQUIPMENT.

The department has the usual laboratory facilities, including a vacuum system for rapid filtration, a compressed-air system for use with blast lamps and a ventilating system. The laboratories are supplied with hydrant, cistern and distilled water. Each student is assigned to a lock-desk containing the necessary equipment. The large lecture room, with raised seats, has a seating capacity of one hundred. The museum occupies a large, well lighted room. The department has a good reference library.

CHEMICAL ENGINEERING.

PROFESSOR HEDGES, ASSISTANT PROFESSORS GORDON, NELSON, MR. THORNTON, MR. PARMELEE, MR. BRYANT.

The foundation for the work in chemical engineering is laid in the courses in chemistry, already described. Chemistry and chemical engineering cover such a broad field that in the Senior year students are advised to specialize in some branch of technical analysis, such as the chemical control of a cement plant or of a cottonseed plant. All the work is supplemented by laboratory work. The chemical industries most highly developed in this State are inspected from time to time.

The courses in Chemical Engineering are as follows:

202. Elementary Quantitative Analysis. Sophomore. Second term, 1 hour a week; with practice.

This course serves as an introduction to the methods of exact analysis, and is regarded as preliminary training for the more advanced courses. In the class-room the practice and theory of the laboratory exercises are dealt with by lectures and recitations. Special attention is given to stoichiometry.

Text: Notes on Quantitative Chemical Analysis, *Foulk.*

Practice, 6 hours a week.

The laboratory work consists of a number of carefully selected experiments in quantitative analysis designed to typify operations of general application. The work is first gravimetric, then volumetric. In the early periods compounds of known composition and purity are analyzed but later substances of industrial significance, whose percentage composition is known only to the instructor are undertaken. Near the close of the term an analysis is made of a carbonate or silicate rock for the commonly determined constituents.

Prerequisite, Chemistry 205.

(Required in Course VIII).

301, 302. Advanced Quantitative Analysis. Junior. First and second terms, 1 hour a week; with practice.

This course is a continuation of Chemical Engineering 202. The theory is devoted to lectures and recitations based on the work in the laboratory.

Text: Quantitative Analysis, *Mahin.*

Practice, first term, 8 hours; second term, 3 hours a week.

The laboratory work comprises the analysis of alloys, fuels, ores, rocks, gas, water, and inorganic substances of industrial importance.

Prerequisite, Chemical Engineering 202.

(Required in Course VIII).

307. Industrial Chemistry. Junior. First term, 3 hours a week.

This is an introductory course, covering the principal applications of chemical processes to commercial products, mostly organic in nature, such as gas manufacture, petroleum products, soaps, the starch and sugar industries, and the manufacture of paper, leather, and explosives. The manufacture of fertilizers, cement and ceramics is also considered.

Text: Industrial Chemistry, *Rogers and Aubert.*

Prerequisite, Chemistry 101, 102.

(Required in Course VIII).

401, 402. Physical Chemistry. Senior. First and second terms, 3 hours a week; with practice.

This course presents, wherever known, physical explanations of chemical and allied phenomena, together with a mathematical exposition of the laws involved. Some of the subjects thus developed are the atomic theory, the periodic law, solubility, fusion, vaporization, the phase rule, dissociation in solution, chemical equilibrium, and relative chemical activity. It leads up to a consideration of the best research of today. Most of the theoretical conclusions deduced in the class room are confirmed in the laboratory. Lectures and recitations.

Practice. 4 hours a week.

The laboratory work will consist of the calibration of apparatus, determination of molecular weights, heats, of reaction, rate of reaction, Law of Mass Action and other related topics. During the second term most of the experiments deal with electrical phenomena. A few experiments illustrating electro-chemical processes of commercial importance are performed.

Prerequisite, Chemistry 304, Mathematics 204.

(Required in Course VIII).

403, 404. Technical Analysis. Senior. First and second terms, 2 hours a week; with practice.

The theory consists of lectures and conferences dealing with technical methods of analysis and with principles of chemical analysis and control, and with the application to problems other than those being carried out by the students in the laboratory. As the work of the students diverges, individual conferences will be arranged with each during which his particular problems will be discussed. Reference will be made to the library and current technical literature.

Practice, first term, 8 hours; second term, 6 hours a week.

The early part of this course is essentially a continuation of Chemical Engineering 302, but the substances dealt with are chiefly organic and include asphalt, oils, soaps, paints, sugars, and foods. The latter part is devoted to a comparison of different methods of analysis, to detailed investigation of problems relating to chemical control, and to such work as seems suitable to the requirements of the individual student.

Prerequisite, Chemical Engineering 302.

(Required in Course VIII).

406. Microchemical Methods. Senior. Second term, 2 hours a week. Practice.

This course is designed to give the student some knowledge of the use of the microscope in qualitative and quantitative analysis. General methods are first explained and dealt with, followed by an examination of various substances to which this method of analysis is particularly adapted.

Open to Juniors and Seniors who have had a course in Quantitative Analyssis.

(Required in Course VIII).

407. Industrial Chemistry. Senior. First term, 3 hours a week.

Same as course 307.

(Required in Course III; elective in Course XI).

408. Metallurgy of Iron and Steel. Senior. Second term, 2 hours a week.

In this course the metallurgy of iron and the manufacture of steel are considered in detail, especial attention being given to the nature and location of valuable iron ore deposits, together with suitable fluxes; to the nature and availability of proper fuels, together with the furnaces used; to the constitution of the resulting pig iron and the manufacture of steel therefrom; and finally to the chemistry of the different kinds of steel and their adaptability in engineering practice. Lectures and recitations.

Text: The Metallurgy of Iron and Steel, *Stoughton.*

Prerequisite, Chemistry 101, 102.

(Required in Course III; elective in Course XI).

EQUIPMENT.

Besides the equipment described under the department of Chemistry, this department is provided with a separate room for technical analysis and one for advanced industrial chemistry. The latter is not yet fully equipped. The former is provided with vacuum and compressed air systems, colorimeters, calorimeters, refractometers, Lovibond tintometer, combustion furnaces, gas burettes and other special apparatus used in technical analysis. The laboratory has the usual equipment for work in physical chemistry.

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR SPENCE, PROFESSOR MORRISON, ASSOCIATE PROFESSORS RICHEY, LOVE, COGHLAN, ASSISTANT PROFESSOR MILLER.

Instruction in this department is based upon the use of good textbooks, supplemented by lectures or explanations in the class room and by practice in the field and testing laboratories, and in the drafting room. Many problems are assigned to the student in order that the underlying principles involved in their solution may be more thoroughly impressed upon him. Effort is made to develop appreciation of the degree of precision required in different kinds of work, and of the conditions under which approximate methods are desirable or admissible. Throughout the instruction work in this department a thorough understanding of the basic principles involved in a few fundamental engineering subjects is preferred to a more superficial introduction to many different subjects.

The courses are as follows:

102. Surveying, Leveling. Freshman. Second term, 3 hours a week; with practice.

An elementary course in plane surveying and leveling. Description of the use and adjustment of the compass, transit and level.

Text: Plane Surveying, *Tracy.*

Practice, 4 hours a week.

The running out of areas and the use of the level.

(Required in Course X).

201. Surveying, Leveling, and Topography. Sophomore. First term, 3 hours a week; with practice.

Description of the use and adjustment of the compass, transit, level and minor surveying instruments is followed by instruction in methods of field work, balancing surveys, computation of areas; profile leveling as applied to street grades, sewers, and ditches; topographic leveling with especial reference to problems in grading, drainage and irrigation; plotting and map drawing.

Text: Plane Surveying, *Raymond.*

Practice, 4 hours a week.

Students are required to become thoroughly familiar with the construction, adjustment and use of the ordinary instruments; to perform field work, fully illustrating all points covered in the theory, and to make all calculations, and to prepare maps of the work done in the field.

Prerequisite, Mathematics 103.

(Required in Courses IV, X, XII).

202. Railroad Engineering. Sophomore. Second term, 2 hours a week; with practice.

The theory and practice of simple and compound curves is taught in both class room and field, and such problems are given as will illustrate the application of the theory to actual working conditions.

Text: Field Manual for Railroad Engineers, *Nagle.*

Practice, 4 hours a week.

Problems in simple and compound curves are assigned and the curves run out in the field.

Prerequisite, Civil Engineering 201.

(Required in Courses IV, X, XII).

204. Analytical Mechanics. Sophomore. Second term, 3 hours a week.

A study of the fundamental principles of mechanics, with numerous problems showing their application in engineering science. Both kinetics and statics are studied, but special emphasis is put upon the applications of the principles of static equilibrium.

Text: To be selected.

Prerequisite, Mathematics 203.

(Required in Courses IV, X, XII).

301, 302. Graphics. Junior. First and second terms, 2 hours a week. Practice.

Elements of Graphic Statics. Use of the force and equilibrium polygons. Determination of centers of gravity and moments of inertia of areas. Stress diagrams. The stresses in simple trusses are determined graphically.

Text: Roofs and Bridges, Part II, *Merriman* and *Jacoby.*

Required in Course IV, option A; Courses X, XII; in the second term only in Course VII).

303. Railroad Construction. Junior. First term, 3 hours a week; with practice.

Transition curves, frogs and switches; construction.

The theory as taught in the class room is demonstrated in the field by the working out of problems and actually doing the necessary field work.

Text: Field Manual for Railroad Engineers, *Nagle.*

Practice, 4 hours a week.

This practice is preliminary to the more elaborate field work in course 400.

Prerequisite, Civil Engineering 202.

(Elective in Courses IV, XI).

303a. Railroad Construction. Junior. Second term, 3 hours [a week; with practice.

A modification of course 303.

Practice, 2 hours a week.

(Elective in Course IV; required in Course XII).

304. Railroad Construction. Junior. Second term, 2 hours a week.

The theory of reconnoissance, preliminary and location surveys, the application of the principles of construction; estimates and reports.

Text: Manual for Resident Engineers, *Moliter* and *Beard.*

Prerequisite, Civil Engineering 303.

(Required in Courses IV, XII; elective in Course XI).

305. Mechanics of Materials. Junior. First term, 4 hours a week; with practice.

This course covers a treatment of the resistance of materials and the mechanics of pipes, riveted joints, beams, columns, shafts, etc. After the study of the elementary mechanics of these structures, attention is given to more advanced topics, such as combined stresses, compound beams and columns, resilience, impact, and fatigue of materials.

Text: Mechanics of Materials. *Merriman.*

Practice, 2 hours a week.

Determination of the strength, ductility, modulus of elasticity, and other properties of engineering materials. Various tests of timber, steel, cast iron, cement, etc., are made by the student and reports submitted showing results. In these reports considerable attention is given to the presentation of results in clear and condensed form by means of curves and tables.

Prerequisite, Mathematics 5.

(Required in Courses III, IV, VII, X, XII).

306. Roads and Pavements. Junior. Second term, 3 hours a week.

This course is intended for students in general civil engineering, and covers a brief general study of country roads and city pavements. Highway location, design, construction and maintenance are studied; also road laws, finances, organization and supervision.

The text is supplemented by lectures, the use of bulletins, road machinery, models and samples of materials.

Text: Text-Book on Highway Engineering, *Blanchard and Drowne.*

Prerequisite, Civil Engineering 201.

(Required in Course IV, options A, C; Course XII; elective in Course XI).

308. Roofs and Bridges. Junior. Second term, 3 hours a week.

The stresses in ordinary roofs and bridges. Each student must determine analytically the stresses due to given loads in various structures, and the proper loading to produce the maximum stresses.

Text: Roofs and Bridges, Part I, *Merriman* and *Jacoby.*

Prerequisite, Mathematics 204, Civil Engineering 305.

(Required in Courses IV, VII, XII).

310. Water Supply Engineering. Junior. Second term, 2 hours a week.

A general study of the sources of water supply for domestic use; the quantity and quality of a supply; the necessity for, and methods of, purification; collection, storage, and distribution of water; the construction and equipment of a complete system.

Text: Water Supply Engineering, *Folwell.*

Prerequisite, Civil Engineering 311.

(Required in Course IV; elective in Course XI).

311, 312. Hydraulics. Junior. First and second terms, 2 hours a week; with practice.

The laws governing water at rest and in motion, as related to engineering problems. The flow of water in short tubes, pipes, mains, ditches, canals, sewers, streams and rivers; measurement of the flow of water by nozzles, orifices, weirs, and meters; estimates for water supply, and water power; theory and efficiency of motors, wheels, turbines, rams and pumps.

Text: Treatise on Hydraulics, *Merriman.*

Practice, second term, 2 hours a week.

Calibration of nozzles, orifices, water meters, weirs, and pressure gauges; efficiency tests on impulse motors, hydraulic rams, and centrifugal pumps of one, two, and three stages.

Prerequisite, Mathematics 204.

(Required in Courses IV, XII; elective in Course XI).

313. Surveying and Leveling. Junior. First term, 2 hours a week; with practice.

This course is the same as course 102 with regard to the instruments and their uses. After the fundamental principles of surveying have been covered, special attention is paid to building and lot surveys, laying out plats, foundations, etc.

Text: Plane Surveying, *Tracey.*

Practice, 2 hours a week.

The use of the instruments; field and drafting room work along the lines indicated in the theory.

Prerequisite, Mathematics 103.

(Elective in Course V).

314. Strength of Materials. Junior. Second term, 2 hours a week; with practice.

A study of the strength of the more common materials and of the simple beam.

Text: Strength of Materials, *Murdock.*

Practice, 2 hours a week.

The practice is similar to the practice of course 305.

Prerequisite, Mathematics 204.

(Required in Course VIII).

316. Mechanics of Materials. Junior. Second term, 4 hours a week; with practice.

Same as course 305.

Practice, 2 hours a week.

(Required in Course V).

317. Strength of Materials. Junior. First term, 2 hours a week; with practice.

Same as course 314.

(Required in Course IX).

318. Surveying, Stresses. Junior. Second term, 3 hours a week; with practice.

An elementary course in plain surveying with special attention to the setting up of the transit, followed by a short course in the determination of stresses and simple structures.

Texts: Plane Surveying, *Tracy;* Graphic Statics, *Malcolm.*
Practice, 3 hours a week.
(Required in Course III).

319. Farm Surveying. Elective. Junior. First term, 2 hours a week; with practice.

Adjustment and use of the compass, transit and level; computation of areas; topographic leveling with special reference to problems in grading, drainage, and irrigation.
Text: Plane Surveying, *Tracey.*
Practice, 4 hours a week.
(Open to students in Course I, X).

320. Contracts and Specifications. Junior. Second term, 2 hours a week.

The same as course 410.
(Required in Course XII).

322. Rural Highways. Junior. Second term, 3 hours a week.

This course covers the construction and maintenance of earth, sand-clay, burnt-clay, shell, gravel and broken stone roads.
Text: Roads and Pavements, *Baker.*
Prerequisite, Civil Engineering 201.
(Required in Course IV, option B; elective in Course XI).

400. Field Practice. Summer Following the Junior Year.

A summer practice course. Effort is made to approximate the actual working conditions of preliminary and location railroad surveys. The class will be required to put in the full working day, and to complete exercises assigned in railroad and topographic surveying.
Text: Manual for Resident Engineers, *Molitor* and *Beard.*
Practice is also given in triangulation, river gauging, field work in road and street location and mapping.
(Required in Course IV).

401. Railroad Drafting. Senior. First term, 3 hours a week. Practice.

Office methods in working up the notes of course 400, including the making of maps, profiles, and estimates.
Text: Railroad Construction, *Webb.*
Prerequisite, Civil Engineering 400.
(Required in Course IV, option A; elective in Course XI).

402. Sewerage. Senior. Second term, 2 hours a week.

Questions relating to the amount of sewage, kind of system, design, construction, maintenance, and methods of sewage treatment and disposal, receive special attention in this course.
Text: Sewerage, *Folwell.*
Prerequisite, Civil Engineering 411.
(Required in Course IV, option A; Course XII; elective in Course XI).

403. Roofs and Bridges. Senior. First term, 2 hours a week; with practice.

The determination of stresses in the more complicated structures and the design of simple trusses.

Text: Roofs and Bridges, Parts I and III, *Merriman* and *Jacoby.*

Practice, 8 hours a week.

The determination of stresses by various graphic methods followed by the design of a Parker truss; after the design, the student is required to make detailed drawings.

Prerequisite, Civil Engineering 308.

(Required in Course IV, option A; elective in Course XI).

403a. Roofs and Bridges. Senior. First term, 2 hours a week; with practice.

An abbreviation of course 403.

Practice, 2 hours a week.

(Required in Course XII).

404. Bridge Design. Senior. Second term, 4 hours a week. Practice.

A continuation of the practice in course 403.

Prerequisite, Civil Engineering 403.

(Required in Course IV, option A; elective in Course XI).

405, 406. General Civil Engineering. Senior. First and second terms, 3 hours a week. Practice.

Practice in the field, drafting room, and laboratory.

Prerequisite, Civil Engineering 304, 305, 312.

(Required in Course IV, option A; elective in Course XI).

407. Masonry. Senior. First term, 3 hours a week.

The principles of masonry construction in general, except as applied to reinforced concrete, are covered in this course.

Text: Treatise on Masonry Construction, *Baker.*

Prerequisite, Civil Engineering 305.

(Required in Course IV; elective in Course XI).

408. Higher Structures. Senior. Second term, 3 hours a week; with practice.

The determination of stress in swing, cantilever, and suspension bridges, and in arches.

Text: Roofs and Bridges, Part IV, *Merriman* and *Jacoby.*

Practice, 4 hours a week.

Prerequisite, Civil Engineering 403.

(Required in Course IV, option A; Elective in Course XI).

409. Irrigation and Drainage. Senior. First term, 2 hours a week.

Hydraulic principles are applied in the course, and the methods of collecting and distributing water to lands under irrigation are discussed. Existing irrigation systems and methods are reviewed.

Text: Manual of Irrigation Engineering, *Wilson.*

Prerequisite, Civil Engineering 305.

(Required in Course IV, option A; elective in Course XI).

410. Contracts and Specifications. Senior. Second term, 2 hours a week.

A brief study of the law of contracts as applied to engineering operations; the relation of the engineer to the owner and to the contractor; the necessity for, and preparation of, engineering specifications and the accompanying documents; general and specific clauses in specifications; illustrative examples.

Texts: Elements of Specification Writing, *Kirby;* Contracts in Engineering, *Tucker.*

(Required in Course IV).

411, 412. Hydraulics. Senior. First and second terms, 2 hours a week; with practice.

Same as courses 311 and 312.

Practice, second term, 2 hours a week.

(Required in Course III).

413. Reinforced Concrete. Senior. First term, 2 hours a week; with practice.

The theories of stress distribution, and various systems of reinforcement employed in the construction of beams, columns, arches, etc., are discussed, and illustrative examples studied.

Text: Principles of Reinforced Concrete Construction, *Turneaure* and *Maurer.*

Practice, 2 hours a week. In Course IV the practice is scheduled under course 405.

Prerequisite, Civil Engineering 407.

(Required in Courses IV, VII, IX, XII; elective in Course XI).

421. Highway Laws, Economics and Organization. Senior. First term, 2 hours a week.

This course takes up a study of the road laws of Texas and other States, benefits of good roads, methods of financing highway construction and maintenance, and organization of State and municipal highway departments.

Text: Text-Book on Highway Engineering, *Blanchard* and *Drowne,* and Good Roads Year-Book.

Prerequisite, Civil Engineering 322.

(Required in Course IV, option B).

422. Non-Bituminous Pavements. Senior. Second term, 4 hours a week.

Cement concrete, brick, wood block and stone block pavements are studied in this course, also sidewalks, curbs and gutters and street cleaning.

Texts: Text-Book on Highway Engineering, *Blanchard* and *Drowne;* Modern Methods of Street Cleaning, *Soper.*

Prerequisite, Civil Engineering 429.

(Required in Course IV, options B, C).

423. Bridge Design. Senior. First term, 6 hours a week. Practice.

The design of highway bridges.

Text: To be selected.

Prerequisite, Civil Engineering 308.
(Required in Course IV, options B, C).

424. Road and Street Systems. Senior. Second term, 2 hours a week; with practice.

Preliminary investigations, local conditions, traffic drainage, foundations, available materials, comparison of different road and street surfaces, comparison of different methods of surveying and mapping, road and street design, cross sections, grades, widths of roads, streets, and sidewalks, road systems, street systems, and city planning.

Text: To be assigned.
Practice, 4 hours a week.
Prerequisite, Civil Engineering 429.
(Required in Course IV, options B, C).

425. Road Laboratory. Senior. First term, 2 hours a week. Practice.

Tests of broken stone for hardness, toughness and resistance to abrasion. Rattler tests of paving brick. Tests of gravel, sand and clay.
(Required in Course IV, option B).

426. Highway Bridges and Culverts. Senior. Second term, 1 hour a week; with practice.

This course includes lectures and problems in the design and construction of highway bridges and culverts. The types of bridges best suited to various traffic conditions are studied, and such questions as the size of water-way, width of road, etc., are taken up in detail.

Text: Design of Highway Bridges, *Ketchum.*
Practice, 4 hours a week.
Prerequisite, Civil Engineering 413, 423.
(Required in Course IV, option B).

427. Bituminous Materials. Senior. First term, 4 hours a week.

This course covers a study of the classification, manufacture, testing, inspection and application of dust preventives and road binders, including road oil, oil asphalts, native bitumens, tar and tar products.

Texts: Text-Book on Highway Engineering, *Blanchard* and *Drowne;* Dust Preventive and Road Binders, *Hubbard.*
(Required in Course IV, option C).

428. Sewerage and Filtration. Senior. Second term, 3 hours a week; with practice.

A study of sewage disposal and purification.
Text: To be selected.
Practice, 4 hours a week.
(Required in Course IV, option C).

429. Bituminous Materials and Surfaces. Senior. First term, 5 hours a week.

This course covers a study of the classification, manufacture, testing, inspection and application of dust preventives and road binders, including road oil, oil asphalts, native bitumens, tars and tar products. Bituminous surface treatments, pavements made by penetration and mixing methods, sheet asphalt, and asphalt block pavements are studied.

Texts: Text-Book on Highway Engineering, *Blanchard* and *Drowne;* Dust Preventives and Road Binders, *Hubbard.*

(Required in Course IV, option B).

431. Stresses. Senior. First term, 2 hours a week; with practice.

Stresses in simple structures.

Text: Graphic Statics, *Malcolm.*

Practice, 3 hours a week.

(Required in Courses I, VII, IX).

433. Surveying and Leveling. Senior. First term, 2 hours a week; with practice.

Same as course 313.

Practice, 2 hours a week.

(Required in Course VII).

438. Higher Structures. Senior. Second term, 2 hours a week; with practice.

The determination of stresses in arches and domes.

Text: To be assigned.

Practice, 3 hours a week.

The complete design of an arch rib.

Prerequisite, Civil Engineering 308.

(Required in Course VII).

51. Graphics. Second year. First term, 1 hour a week; with practice.

Elements of graphic statics, use of the force and equilibrium polygons; the graphical determination of stresses and simple trusses.

Text: Graphic Statics, *Malcolm.*

Practice, 3 hours a week.

(Required in Course E.).

52. Surveying. Second year. Second term, 3 hours a week; with practice.

The same as course 102.

Practice. 4 hours a week.

(Required in Course E.).

EQUIPMENT.

The department occupies a portion of the Civil Engineering Building and has five recitation rooms, two drafting rooms, library room, offices, and a good-roads exhibit room. In the basement, the department has an instrument room, a general testing room, a hydraulic and road materials testing laboratory, a cement laboratory, and store room.

For the field work, the equipment consists of a well assorted lot of transits and engineers' levels for general work, also for more precise work in city surveying and leveling and for simple triangulation. Also surveyors' compasses, terracing levels, plane tables, aneroid barometers, range poles, rods, chains, chain tapes, metallic tapes, surveyors' pins, axes, etc. For the drafting room and other office work there are drawing tables, reckoning machines, two universal drafting machines, planimeters, slide rules, calculating instruments, protractors for general and special uses, and a sufficient supply of T squares, etc.

In the general testing laboratory there is one machine of 100,000, one of 50,000 and one of 20,000 pounds capacity, a 50,000 inch-pounds torsion machine and a rattler for testing paving brick. With the exception of the 20,000-pound machine these are all power-driven.

The Hydraulic Laboratory contains weirs, pressure gauges, hook gauges, water meters, measuring tanks, impulse wheels, hydraulic ram, centrifugal pumps, pitot tubes, current meters, nozzles, and other apparatus for hydraulic measurements. The centrifugal pumps are connected to a pressure tank in order that they may be forced to pump against various heads. The road materials testing laboratory contains sieves for examining gravel and machines for testing the hardness, working qualities, cementing values, etc., of materials suitable for road building.

In the cement laboratory are moulds for shaping briquettes for tension tests, moulds for compression tests, cement testing-machines, sieves for testing the fineness of cement and sand, Vicat and Gillmore's needles for testing time of setting, damp closet, balances, pans and other appliances used in testing the qualities of cements.

A road exhibit room is also maintained for the benefit of students and visitors. In this room are shown models of road sections and surfaces made of various materials available in Texas. Samples of gravel, rock, asphalt, and road soils, together with photographs, charts and maps of road work in the State complete the exhibit.

The department library and reading room contains engineering books, periodicals, blue prints, photographs, etc., and is kept constantly open for the use of students during the session.

DEPARTMENT OF DAIRY HUSBANDRY.

PROFESSOR RIDGWAY, MR. CLUTTER, MR. DARNELL.

The courses offered in this department are for the purpose of giving special training in the manufacture and handling of dairy products.

These courses may be divided as follows:

(1) The Care and Handling of Milk.
(2) The Manufacturing of Products from Milk.
(3) The Management and Operation of Creameries.

Special importance is given to the laboratory work in connection with these courses, as the necessity of practical training along these lines is fully appreciated. The College creamery, which is run in connection with this department, affords laboratory facilities for working out the practical problems involved in these courses.

The courses are as follows:

102. Elementary Dairying. Freshman. Second term, 2 hours a week; with practice.

A course dealing with the secretion and composition of milk, and its products; the use and application of the lactometer in the determination of total solids and adulterations; the various methods of cream raising.

Text: Milk and Its Products, *Wing.*

Practice, 2 hours a week.

(Required in Course I).

301. Milk Inspection. Elective. Junior. First term, 1 hour a week; with practice.

Sanitation and pasteurization of milk and the testing of milk and its products for preservatives and adulterations.

Practice, 2 hours a week.

(Open to students in Courses I, X).

302. Dairy Manufactures. Elective. Junior. Second term, 2 hours a week; with practice.

A course dealing with the manufacture of the more common dairy products, such as butter, cheese, and ice cream.

Practice, 4 hours a week.

(Open to students in Courses I, X).

401. Herd Book Study. Elective. Senior. First term, 4 hours a week. Practice.

A course in tracing and studying the pedigrees of the leading strains and families of dairy cattle.

(Open to students in Courses I, X).

402. Milk Production. Elective. Senior. Second term, 3 hours a week; with practice.

This course covers the field of dairy husbandry in its relation to the producer. The breeding, feeding and management of dairy cattle will be given special consideration.

Practice, 2 hours a week.

(Open to students in Courses I, X).

403. Factory Management. Senior. First term, 2 hours a week; with practice.

This course will deal with the organization, construction, and management of creameries and ice cream factories, with special reference to creamery refrigeration and creamery accounting.

Practice, 2 hours a week.

(Open to students in Courses I, X).

404. Technology of Milk. Elective. Senior. Second term, 3 hours a week.

The utilization of milk and its products. The food value of dairy products.

(Open to students in Courses I, X).

405. Seminar Work. Elective. Senior. First term, 2 hours a week.

Devoted to a study along selected lines of research, with a review and study of recent experiment station work.

(Open to students in Courses I, X).

22. Elementary Dairying. First year. Second term, 2 hours a week; with practice.

A modification of course 102, dealing specially (in a more practical way) with herd record keeping and herd testing.

Text: Milk and Its Products, *Wing.*

Practice, 2 hours a week.

(Required in Course C).

23. Farm Dairying. Second year. First term, 2 hours a week; with practice.

The feeding, breeding, and management of dairy cattle; the use and care of cream separators, and the manufacture of butter on the farm.

Text: Dairy Cattle and Mild Production, *Eckles.*

Practice, 2 hours a week.

(Required in Course C).

52. Elementary Dairying. Second year. Second term, 2 hours a week; with practice.

Same as course 22.

(Elective in Course D).

53. Farm Dairying. Second year. First term, 2 hours a week; with practice.

Same as course 23.

(Elective in Course D).

DEPARTMENT OF DRAWING.

PROFESSOR A. MITCHELL, ASSISTANT PROFESSOR GEIST, MR. REDLICH, MR. BURTON.

Instruction in drawing and descriptive geometry is given with three objects in view: First, to train the student by developing his powers of observation and imagination; second, to provide a basis for further instruction in other departments; and, third, to prepare the student for professional work as a draftsman.

Throughout all the courses in drawing the importance of free-hand lettering is emphasized and regular practice in plain lettering is required.

The department is equipped with the necessary tables, models and reference books.

The courses are as follows:

101. Mechanical Drawing. Freshman. First term, 3 hours a week. Practice.

Care and use of drawing instruments, simple exercises in the use of drawing instruments, instrumental and free-hand lettering, geometrical constructions, constructions of plane curves, plane and axometric projections.

Text: Mechanical Drawing, Part I, *Giesecke.*

(Required in all four-year engineering Courses).

102. Mechanical Drawing. Freshman. Second term, 3 hours a week. Practice.

Problems in descriptive geometry involving points, lines, planes, tangency, intersections of planes and solids, intersections of solids, development of surfaces, shades and shadows, linear perspective. This course is parallel to and is an application of courses 103 and 104.

Text: Mechanical Drawing, Part II, *Giesecke.*

Prerequisite, Drawing 103, 104.

(Required in all four-year engineering Courses except VII, IX.)

103, 104. Descriptive Geometry. Freshman. First and second terms, 2 hours a week.

Class room exercises, quizzes, and lectures on general and special problems relating to points, lines, planes and solids; problems in shades and shadows and in perspective. Special attention is paid to the representation of objects, by autographic projection, in the first and third angles.

Text: Descriptive Geometry, *Giesecke.*

(Required in all four-year engineering Courses).

105. Freehand Drawing. Freshman. First term, 1 hour a week. Practice.

Drawing from geometrical solids, common objects, plaster casts, still life, to study form, proportion, light and shade. Because of the need of facility in this field, considerable importance is attached to freehand drawing; the aim is to develop in the student the power of free, artistic expression.

(Required in all four-year engineering Courses except VII, IX).

106. Freehand Drawing. Freshman. Second term, 1 hour a week. Practice.

Drawing, with special attention given to measuring, dimensioning and describing machines, machine parts, engineering structures and details.

The course is varied to meet the practical needs of students in the different engineering departments.

Prerequisite, Drawing 105.

(Required in all four-year enginereing Courses except VI, VII, IX).

108. Freehand Drawing. Freshman. Second term, 1 hour a week. Practice.

Designing of figures and patterns for fabrics.

Prerequisite, Drawing 105.

(Required in Course VI).

109. Freehand Drawing (Elementary). First term, 4 hours a week. Practice.

Line charcoal drawings of "blocks" and casts of heads and simple architectural ornament. Three mentions required.

(Required in Courses VII, IX).

NOTE.—"Mention" means excellent.

110. Freehand Drawing (Elementary). Freshman. Second term, 4 hours a week. Practice.

Shaded charcoal drawings of blocks and casts of heads and simple architectural ornament. Three mentions required.

Prerequisite, Drawing 109.

(Required in Courses VII, IX).

112. Shades and Shadows, Perspective. Freshman. Second term, 3 hours a week. Practice.

Architectural shades and shadows. Building perspective.

Texts: Shades and Shadows, *McGoodwin;* Perspective, *Lubschez.*

Prerequisite, Drawing 103.

(Required in Courses VII, IX).

201. Mechanical Drawing. Sophomore. First term, 4 hours a week. Practice.

Standard conventional section lining, drawing of standard bolts, nuts, rivets and threads; helixes, elementary parts of machines and engineering structures.

Text: Mechanical Drawing, Part III, *Giesecke.*

(Required in all four-year engineering Courses except VII, IX).

202. Mechanical Drawing. Sophomore. Second term, 2 hours a week. Practice.

A continuation of course 201, including patent office drawings, working drawings of machines, engineering structures and details. The student is required to carefully sketch and measure the model; then, from his dimensioned sketch, he makes on detail paper, and traces, his working drawings.

This course is varied to meet the practical needs of students in the different engineering departments.

Prerequisite, Drawing 201.

(Required in all four-year engineering Courses except III, VII, IX).

209. Freehand Drawing (Advanced). Sophomore. First term, 4 hours a week. Practice.

Line charcoal drawings of full-length antique and modern subjects; shaded charcoal drawings from casts of more complex architectural ornament. Three mentions required.

Prerequisite, Drawing 110.

(Required in Courses VII, IX).

210. Freehand Drawing (Advanced). Sophomore. Second term, 4 hours a week. Practice.

Shaded charcoal drawings of full-length antique and modern subjects. Three mentions required.

Prerequisite, Drawing 209.

(Required in Courses VII, IX).

305. Topographical Drawing. Junior. First term, 4 hours a week. Practice.

Topographical lettering, conventional signs, contour lines, topographicap maps, topographical sketching.

Text: Topography, *Mitchell.*

(Elective in Course IV, options A, B).

307. Topographical Drawing. Junior. First term, 2 hours a week. Practice.

Same as course 305.

Text: Topography, *Mitchell.*

(Required in Course XII; elective in Course IV, options A, B).

309. Freehand Drawing (Charcoal Life). Junior. First term, 4 hours a week. Practice.

Line charcoal drawings of the undraped figure; water color renderings of architectural subjects. Three mentions required (2 and 1).

Prerequisite, Drawing 210, Architecture 202.

(Required in Courses VII, IX).

NOTE.—The mention in water color rendering may be required in the regular work of Architecture 301, 302, 303 or 304.

310. Freehand Drawing (Charcoal Life). Junior. Second term, 4 hours a week. Practice.

Shaded charcoal drawings of the undraped figure; pen-and-ink and water-color sketches of the draped figure. Three mentions required (2 and 1).

Prerequisite, Drawing 309.

(Required in Courses VII, IX).

409. Freehand Drawing (Life Class). Senior. First term, 4 hours a week. Practice.

Black-and-white and color studies of the undraped figure (guache and oil); sketches of the draped figure in various media. Three mentions required (2 and 1).
Prerequisite, Drawing 310.
(Required in Course IX).

410. Freehand Drawing (Life Class). Senior. Second term, 4 hours a week. Practice.

Color studies of the undraped figure (oil, water-color, pastel); modeling in clay of original studies for architectural ornament. Three mentions required (2 and 1).
Prerequisite, Drawing 409, Architecture 310.
(Required in Course IX).

11, 12. Mechanical Drawing. First year. First and second terms, 3 hours a week. Practice.

Proper care and correct use of drawing instruments, simple exercises in the use of drawing instruments, lettering, geometrical constructions, standard conventional signs, standard bolts, nuts, rivets, and threads; helixes, sketching, measuring and dimensioning elementary parts of machines, finishing working drawings, layouts of circuits, systems, and plants.

This course is varied to meet the practical needs of students in the different engineering departments.
Text: Mechanical Drawing, Parts I and III, *Giesecke.*
(Required in Courses F, G, H, L, first term; F, G, H, second term).

13. Freehand Drawing. First year. First term, 1 hour a week. Practice.

This course is practically the same as the course described under Drawing 105.
(Required in Courses F, G, H, L).

14. Freehand Drawing. First year. Second term, 1 hour a week. Practice.

This course is practically the same as the course described under Drawing 106.
(Required in Courses F, G, H).

15. Mechanical Drawing. First year. First term, 2 hours a week. Practice.

Proper care and correct use of drawing instruments, simple exercises in the use of drawing instruments, instrumental and free-hand lettering, geometrical constructions, orthographic and isometric projections.
Text: Mechanical Drawing, Part I, *Giesecke.*
(Elective in Course D).

16. Mechanical Drawing. First year. Second term, 2 hours a week. Practice.

Working drawings of simple farm structures.
(Elective in Course D).

17, 18. Freehand Drawing. First year. First and second terms, 2 hours a week. Practice.

Sketching from geometrical solids, common objects, casts and natural specimens of plant and animal life.

(Elective in Course D).

19, 20. Mechanical Drawing. Tracing, Blueprinting, and Lettering. First year. First and second terms, 4 hours a week. Practice.

Proper care and correct use of drawing instruments, simple exercises in the use of drawing instruments, geometrical constructions, autographic and isometric projections, analysis and formation of Roman, Gothic, Block and Stump letters, with constant instrumental and freehand practice.

The drawings of this course are made in pencil on detail paper and then traced on tracing cloth. From these tracings blue prints are made.

Texts: Mechanical Drawing, Part I, *Giesecke;* Lettering, *Reinhardt.*

(Required in Course E).

(Credit for this course will not be accepted for Drawing 101).

51, 52. Mechanical Drawing. Second year. First and second terms, 4 hours a week. Practice.

A continuation of Drawing 11 and 12, including detailed and assembled drawings of electrical and textile machinery, patent office drawings, tracing and blue printing.

(Required in Courses F, H).

DEPARTMENT OF ECONOMICS.

PROFESSOR KIBLER.

The Department of Economics offers the following courses, applying, as indicated, to the Courses in Agriculture and Engineering, respectively.

301, 302. Transportation. Junior. First and second terms, 2 hours a week.

This course presents an outline of the American transportation system, concluding with a study of, the theory and practice of rate-making, scientific shipping, and interstate and State regulation of railways.

Text: American Transportation, *Johnson.*
(Elective in Course VI).

303. Fundamental Principles of Economics. Junior. First term, 3 hours a week.

The first terms of the Junior year is given to a study of the principles of Economics as a foundation for the course in Rural Economics. The course of study considers the theory of economic activities concerning production, distribution and consumption; and the practical problems of credit, banking, foreign and domestic exchange, monetary systems, co-operation, tariff, transportation, trusts, corporations, and finance and taxation.

Text: Principles of Economics, *Seager.*
(Required in Course X).

304. Rural Economics. Junior. Second term, 3 hours a week.

The second term of the Junior year is given to a more special application of economic theory to practical rural problems. Among the subjects considered are the conservation of land and other natural resources; land tenures; labor problems; economic and efficient co-ordination of the factors of production; scientific management; co-operative systems; and a survey of rural life.

Text: Rural Economics, *Carver.*
(Required in Course X).

306. Business Law. Junior. Second term, 2 hours a week.

This course is designed to give the student a knowledge of such fundamental legal principles as will enable him to have an intelligent conception of his legal rights and obligations. The subjects treated are as follows: contracts, agency, partnership, joint stock companies, corporations, and real and personal property.

Text: Elements of Business Law, *Huffcut.*
(Elective in Course V).

401. Fundamental Principles of Economics. Senior. First term, 3 hours a week.

This is an adaptation of course 303 to the needs of students in the Course in Agriculture.
(Required in Course I).

402. Rural Economics. Senior. Second term, 3 hours a week.

This course gives a general survey of the material covered in course 304, 405.
(Required in Course I).

403. Fundamental Principles of Economics. Senior. First term, 3 hours a week.

This is an adaptation of course 303 to the needs of students in the Course in Engineering.
(Required in all four-year engineering Courses except III; elective in Course III).

404. Business Organization and Management. Senior. Second term, 3 hours a week.

This course considers the common forms of business organization, the partnership, the joint stock company, and the corporation; the adaptation of form of organization to the several classes of business undertakings, with the privileges and obligations characterizing each; and the technique of modern management.
Text: To be assigned.
(Required in all four-year engineering Courses except III; elective in Course III).

405. Co-operative Credit and Marketing. Senior. First term, 3 hours a week.

This is an advanced course covering the development of rural organizations in Europe and America. It is designed to place such information before the student as will inspire and equip him to perfect practical organizations in his own community for facilitating credit operations, securing best market prices for farm products, and purchasing to advantage farm equipment and household supplies. This course is given by lectures and assigned readings.
(Required in Course X).

406. Rural Problems. Senior. Second term, 3 hours a week.

This course is designed to place before the student a comprehensive plan for socializing rural life. It considers the rural problem in its larger aspects, and the place of various organizations (schools, churches, social clubs, co-operative associations, etc.) and facilities for transportation and communication, in the moral, social, and industrial development of the community.
Text: Constructive Rural Sociology, *Gillette.*
(Required in Course X).

407. Constitutional Law of the United States. Senior. First term, 4 hours a week.

This is an elementary course designed to acquaint the student with the fundamental principles of our Constitution. It explains the powers and duties of each of the three departments of our Federal government; the relation of the States to the central government with respect to commerce, taxation, foreign relations, police power, etc.; personal rights and privileges under the Constitution; and the jurisdiction of the Federal courts.

Text: To be assigned.

(Required in Course XII).

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR BOLTON, ASSOCIATE PROFESSOR CANNON, ASSISTANT PROFESSOR WOOTEN, MR. BEACH, ASSISTANT SOUTH.

Instruction in Electrical Engineering is given by recitation, lecture, experiment, lantern illustrations, laboratory exercises, and individual conference. In most courses, some modern text-book is taken as a basis for study and the work broadened and explained by lectures and problems.

The laboratory practice is designed more firmly to impress the principles taught in the class room, to familiarize the student with the practical operation of electrical apparatus, and to teach him to investigate for himself the characteristics of various types of machines. Reports are required on all experiments performed, and the student learns to express thoughts concisely.

The courses are as follows:

201. Electricity and Magnetism. Sophomore. First term, 4 hours a week; with practice.

Lectures, recitations and problems in electricity and magnetism.

Practice, 4 hours a week.

This includes a laboratory investigation of the phenomena studied in the text-book.

Prerequisite, Mathematics 102, 103.

(Required in Course V).

202. Electrical Measurements. Sophomore. Second term, 5 hours a week; with practice.

Lectures and recitations on the theory, standardization and use of electrical measuring instruments, including galvanometers, bridges, voltmeters, ammeters, condensers, wattmeters, and recording instruments.

In connection with this course, a short time is devoted to the study of the National Electric Code and modern methods of wiring.

Practice, 4 hours a week.

This practice is intended to clarify the ideas received by the student in the class room. It includes the accurate measurements of various electrical quantities, such as resistance, inductance, capacity, and the effect of temperature, position, etc., on these quantities; a study of the various types of batteries to determine their adaptability to different uses; calibration and repair of instruments, such as ammeters, voltmeters, and wattmeters.

Prerequisite, Electrical Engineering 201, Mathematics 201.

(Required in Course V).

301. Direct Currents. Junior. First term, 5 hours a week; with practice.

The course is devoted to the study of the theory and applications of direct current machinery. Attention is given to modern machinery and its application.

Practice, 6 hours a week.

The practice is intended to give practical demonstration of the theory. It includes the operation of dynamos and motors, the determination of characteristics and the measurements and calculation of losses, efficiencies, and regulation. A practical study is also made of the various types of modern illuminants to determine reliability, efficiency, adaptability to various uses, etc.

Prerequisite, Electrical Enginering 202; or Physics 201, 202, Mathematics 201.

(Required in Course V; elective in Course XI).

302. Alternating Currents. Junior. Second term, 5 hours a week; with practice.

Lectures and recitations on the principles of alternating currents, including a study of the relations of voltage, current, resistance, inductance and capacity.

Text: Alternating Currents, and Alternating Current Machinery, *Jackson.*

Practice, 6 hours a week.

An experimental study of the effect of resistance, reactance, and capacity on alternating current circuits; the determination of wave shapes; and tests of some of the simpler types of alternating current machines.

Prerequisite, Electrical Engineering 301, Mathematics 204.

(Elective in Courses V, XI).

304. Problems. Junior. Second term, 2 hours a week. Practice.

A study in the computing room of problems based on all the engineering subjects which the student has taken up to this time. Both graphical and mathematical solutions are required in many cases.

Prerequisite, Electrical Engineering 301, 302, Mathematics 204.

(Required in Course V; elective in Course XI).

305, 306. Electrical Machinery. Junior. First and second terms, 2 hours a week; with practice.

Lectures and recitations on the operation and characteristics of dynamos, motors, transformers and other electrical appliances of the types most commonly met with in general engineering practice. This course is intended to give only a general idea of the subject. The course is intensely practical, only the more fundamental principles being studied in detail.

Practice, second term, 3 hours a week.

The practice is designed to give the general engineering student some degree of familiarity with the operation and the more important characteristics of both direct current and alternating current machines.

Prerequisite, Physics 201, Mathematics 204.

(Required in Courses IV, VI, VIII, XII).

307, 308. Electrical Machinery. Junior. First and second terms, 3 hours a week; with practice.

This course includes all the instruction given in courses 305, 306, but somewhat more in detail. In this course special emphasis is laid on the study of the industrial application of motors and the operating characteristics of electrical machines usually found in power plants.

Practice, second term, 3 hours a week.

Same as the practice for course 306.

(Required in Course III; elective in Course XI).

310. Electric Lighting. Junior. Second term, 2 hours a week; with practice.

Lectures and recitation on the principles of illumination, with special emphasis on the use of electric lamps.

Practice, 2 hours a week.

This practice includes the design of systems of illumination for various purposes. The practice also includes the test of some modern illuminants and the test of the illumination in buildings already lighted.

Prerequisite, Physics 201, 202.

(Required in Courses VII, IX).

312. Alternating Currents. Junior. Second term, 5 hours a week; with practice.

Same as course 302.

Practice, 4 hours a week.

A modification of the practice of course 302.

(Elective in Course V).

314. Electrical Machinery. Junior. Second term, 2 hours a week.

Lectures and recitations on the characteristics of generators and motors, such as find use in office buildings, hotels, etc.

Prerequisite, Physics, 201, 202.

(Elective in Course VII).

401, 402. Alternating Current Machinery. Senior. First and second terms, 3 hours a week; with practice.

This course embraces a study of alternating currents and alternating current machinery, including methods of generation, transformation and use; a study of wave shapes and quantities affecting wave shapes; and the effect of balanced and unbalanced loads.

The subject is treated from both the graphical and the mathematical viewpoint, the text being supplemented by lectures and problems.

Text: Alternating Currents and Alternating Current Machinery, *Jackson.*

Practice, first term, 6 hours a week; second term, 4 hours a week.

The practical operation and determination of the characteristics of various types of alternating current machines.

Prerequisite, Electrical Engineering 301, 308, or 312.

(Required in Course V; elective in Course XI).

403. Electrical Machine Design. Senior. First term, 3 hours a week; with practice.

Lectures and recitations on the design of electrical machines.

Practice, 4 hours a week.

Practice in the design of dynamos, motors and transformers. Working drawings of some of the machines are required, while for others only the design of the electrical parts of the machine is required.

Prerequisite, Electrical Engineering 301, 302; to be accompanied or preceded by Electrical Engineering 401.

(Required in Course V; elective in Course XI).

404. Power Plant Design. Senior. Second term, 1 hour a week; with practice.

This course is intended to give the student an idea of the relations of the various machines required in an electric generating station. In order that the student may become familiar with the most modern practice, this course will be based largely on reference to standard texts and to technical magazines.

Practice, 3 hours a week.

The student is required to design and make estimates of the cost of such parts of an electric plant as the time will permit.

Prerequisite, Electrical Engineering 401, 403, Mechanical Engineering 302.

(Required in Course V; elective in Course XI).

406. Electric Power Transmission. Senior. Second term, 2 hours a week.

Lectures and recitations on the transmission and distribution of power by electrical methods. Many subjects not treated in the text-books are studied, and the student is encouraged to investigate all available sources for information.

The student is required to design and estimate costs of several transmission lines.

Prerequisite, Electrical Engineering 401.

(Required in Course V).

408. General Problems. Senior. Second term, 2 hours a week. Practice.

A course of problems based on all engineering work required of the student previous to graduation.

Prerequisite, all subjects required before the second term of the Senior year.

(Required in Course V).

421, 422. General Electrical Engineering. Senior. First and second terms, 2 hours a week.

Phenomena related to transients, surges, non-harmonic voltage, etc.

Prerequisite, all Junior work.

(The right is reserved to withdraw this course if it is elected by less than five students).

(Elective in Course V).

423, 424. Electric Railways. Senior. First and second terms, 2 hours a week.

A study of railway apparatus, costs of construction and operation of electric railway systems, and operation methods. Students are required to make an engineering report on a small railway project, estimating cost of construction and operation and probable returns on investment.

Prerequisite, Electrical Engineering 301.

(The right is reserved to withdraw this course if it is elected by less than five students).

(Elective in Course V).

425, 426. Illumination. Senior. First and second terms, 2 hours a week.

A course dealing with the principles of illumination and the application of these principles to specific cases. Attention is given to the arrangement of electric lights for decorative purposes as well as for useful illumination.

Prerequisite, Electrical Engineering 301, 305, or 307.

(The right is reserved to withdraw this course if it is elected by less than five students).

(Elective in Course V).

427, 428. Telephone Engineering. Senior. First and second terms, 2 hours a week.

Lectures and recitations on telephone systems; their design, installation and management. This course includes a discussion of the relative advantages of the different types of telephones, and the faults and peculiarities met in each system.

Prerequisite, Electrical Engineering 301, 302.

(The right is reserved to withdraw this course if it is elected by less than five students).

(Elective in Course V).

429. Industrial Applications. Senior. First term, 2 hours a week.

A study of the applications of electricity to uses in the various industries. The course will include reports on the advantages of electric drive for certain industrial enterprises, together with estimates of costs, etc.

Must be accompanied by Electrical Engineering 401.

(The right is reserved to withdraw this course if it is elected by less than five students).

(Elective in Course V).

430. Plant Management. Senior. Second term, 2 hours a week.

Lectures on the management of power plants. This includes discussion of records, reports, methods of increasing the load on the plant, factors affecting plant efficiency, etc.

Prerequisite, Electrical Engineering 401.

(The right is reserved to withdraw this course if it is elected by less than five students).

(Elective in Course V).

21. Electricity and Magnetism. First year. First term, 3 hours a week; with practice.

A modification of course 201.

Practice, 4 hours a week.

Laboratory verification of the laws studied in the theory. The course also includes the use of instruments for the measurement of voltage, current, resistance, etc.

(Required in Course F).

22. Direct Currents. First year. Second term, 3 hours a week; with practice .

A modification of course 301.

Practice, 4 hours a week.

(Required in Course F).

23. Electricity and Magnetism. First year. First term, 6 hours a week; with practice.

A course dealing with the fundamental principles of magnetism and electricity, including enough of the principles of alternating currents to permit an understanding of the effect of resistance, reactance and capacity. The course lays special emphasis on principles which find application in telephony.

Practice, 6 hours a week.

A laboratory investigation of the phenomena studied in the class room.

(Required in Course L).

25, 26. Telephony. First year. First and second terms, 4 hours a week, with practice.

A course of lectures and recitations dealing with telephones and telephone systems. The course includes a study of substation apparatus for both magneto and common battery systems, followed by a study of drops, signals, cord circuits, etc., of various types of switchboards. This is followed by a study of the complete switchboards, the various distributing frames, and the arrangement of the apparatus in the exchange. This is followed by a study of combined telephone and telegraph systems, and a study of the methods of testing telephone lines and cables.

Practice, second term, 4 hours a week.

An experimental study of the parts of telephones and switchboards, including practice in wiring switchboards, etc.

(Required in Course L).

28. Telephone Power Plants. First year. Second term, 3 hours a week.

A study of the principles and methods of operation of the power plants used in common battery systems, including storage batteries, motor-generators, ringing machines, rectifiers, etc.

(Required in Course L).

30. Telephone Plant Design. First year. Second term, 6 hours a week; with practice.

A study of methods of plant construction, including the entire telephone plant, both local and long distance.

Practice, 8 hours a week.

The practice includes the design of parts of exchanges, the making of working drawings for various purposes, and the complete design, including estimates of cost, of at least two exchanges of different types.

(Required in Course L).

32. Technical Business Forms. First year. Second term, 1 hour a week.

The principles of contracts, specifications and business forms for telephone and other electric systems.

The student is required to prepare specifications covering various appliances, and to make written reports so that he may learn to write a clear, concise technical report.

(Required in Course L).

34. Telephone Testing. First year. Second term, 4 hours a week. Practice.

The student is given practice in making the tests most commonly used in telephone work under conditions as nearly as possible like those met in commercial work. The tests include the use of such instruments as the wheatstone bridge megger, and cross-talk meter. Tests are made for opens, grounds, short circuits, etc.

(Required in Course L).

51, 52. Applied Electricity. Second year. First and second terms, 4 hours a week; with practice.

A course of instruction covering magnetism and electricity, magnetic circuits, direct and alternating currents, and direct and alternating current machines and their applications. The subject is treated from a practical standpoint.

Practice, 4 hours a week.

Electrical measurements and the experimental study of the construction and operating characteristics of electrical machinery.

(Required in Courses E, G).

55. Alternating Currents. Second year. First term, 3 hours a week.

A study of alternating currents with particular emphasis laid on the practical application of the subject matter. As far as possible, the subject will be treated from the graphical viewpoint.

(Required in Course F).

56. Meters. Second Year. Second term, 2 hours a week.

A course covering the principles of operation, material of construction and methods of repair, test and calibration of electrical meters. This includes switchboard meters and watt-hour meters of various types.

Practice in the repair, calibration and test of meters is included in course 62.

(Required in Course F).

57. Wiring and Illumination. Second year. First term, 4 hours a week.

A study of the rules and methods for exterior and interior wiring, including calculations for material to be used and estimates of costs.

The course also includes lectures and recitation on lighting and illumination, with special emphasis on electric lighting. The practice for this course is included in course 61.

(Required in Course F).

58. Electrical Machinery. Second term, 5 hours a week.

A course covering the principles involved in the design and operation of electrical machinery. The course deals with transformers and both direct and alternating current motors and generators and the applications of each type of machine.

(Required in Course F).

59, 60. Telephony. Second year. First and second terms, 4 hours a week.

Same as courses 25, 26.

(Elective in Course F).

61, 62. Electrical Laboratory. Second year. First and second terms, 8 hours a week. Practice.

Instruction and practice in testing electrical machines, including generators, motors, transformers, meters, lamps, etc. The course will also include practice in laying out circuits and installing electric wires. This practice is intended to strengthen the theoretical courses and at the same time give the student a thoroughly practical knowledge of electrical appliances and methods.

This course will include practical experience in operating the electric machinery found in power plants.

(Required in Course F).

64. Technical Business Forms. Second term, 1 hour a week.

Same as course 32.

(Required in Course F).

66. Electrical Construction. Second term, 3 hours a week. Practice.

Instruction and practice in the construction and repair of electrical machines. This course is intended to familiarize the student with the interior construction of electrical machines and to give him sufficient knowledge of materials and methods to enable him to make repairs in these machines.

(Required in Course F).

EQUIPMENT.

The electrical engineering laboratories comprise a storage battery room, two adjoining machinery laboratories, a measurements laboratory, a standardizing room, a photometric laboratory, a telephone laboratory, an instrument room, a workshop and storage rooms.

The electrical laboratories are supplied with 2300 volt, three-phase, 60 cycle power from the College power station. Alternating current at 110 and 220 volts is obtained through transformers. Direct current is supplied by two motor-generator sets located in the machinery laboratory. The smaller set consists of a 2300-volt, 50-horsepower induction motor direct connected to a 35 k. w., 125 volt, compound wound, direct current generator. The larger set consists of a 2300-volt, 100-horsepower synchronous motor direct connected to two 35 k. w., 250-volt, Dobrowolsky, three-wire, direct current generators, so arranged that they may be operated independently or connected in series for obtaining 500 volts. A 3-panel switchboard controls the above equipment and the feeders to the 6-panel switchboard used for the distribution of power within the machinery laboratories and to the switchboards located in the other laboratories. Throughout all laboratories the distribution of power is controlled by a plug-and-socket system, thus securing absolute flexibility.

The storage battery room contains a 60-cell lead storage battery, and a 110-cell Edison storage battery, with a mercury arc rectifier for charging. The batteries are connected through suitable control to the main distributing board.

The equipment of the machinery laboratories is as follows: Two Westinghouse 323-A street car motors mounted on a single shaft with prony brake attachment and equipped with both a hand controller and a master controller operating an electro-pneumatic system; one 250-volt and one 500-volt direct current motor; one 5-horsepower, 110-volt, direct current series motor with interpoles; one 1½-horsepower shunt generator; three 6 k. w. compound wound machines; three 4 k. w. compound wound machines; one 5 k. w. direct current machine with four slip rings; two 5 k. w. compound wound direct current generators with interpoles; one 7½-horsepower compound wound motor with interpoles; one 7½-horsepower Reliance variable speed motor; one 10 kva three-phase generator with six slip rings; one 20 kva rotary converter with six rings; one 8 kva converter; one 10 kva three-phase generator driven by a set of two 10-horsepower, three-phase induction motors, arranged for cascade operation; one motor generator set consisting of a direct current motor and a 3 kva alternator with six rings for single phase, two or three-phase; one 2-horsepower Century single-phase motor; one 2-horsepower Wagner single-phase motor; one 2-horsepower, two-phase induction motor; two 5-horsepower, three-phase induction motors; one 3-horsepower, three-phase induction motor; one 10-horsepower Stow variable speed motor driving a 7½ kva alternator with the armature wound in twelve sections with connections to a terminal board; one 10-horsepower, three-phase induction motor with four different rotors, both squirrel cage and phase wound; one 10-horsepower, three-phase variable speed induction motor; one motor generator set consisting of a 10-horsepower induction motor direct connected to a 7½ k. w., 125-volt, compound wound direct current generator; a number of transformers of different capacities; a constant current transformer; and accesory apparatus, such as rheostats, lamp banks, variable inductances, prony brakes, torsion dynamometer, etc.

The instrument equipment is ample and comprises d-c and a-c ammeters and voltmeters, wattmeters, frequency meters, synchroscopes, power factor meters, tachometers, etc.

The electrical measurements laboratory has a full equipment of the apparatus needed for the study of the fundamentals of electrical measurements. The equipment includes the following: various types of wheatstone bridges; a Kelvin double bridge; a Cary-Foster bridge; magnetometers, dynamometers; portable, semi-portable and wall galvanometers; astatic galvanometers; universal tangent galvanometer; calorimeters; sechometer; influence machine; electro-static apparatus; spark coils; apparatus for testing magnetic qualities of iron and steel; standard resistances; standard cells; physical balances; universal shunts; resistance boxes; variable inductances and capacities; portable storage batteries, and various minor equipment.

The standardizing room is equipped with a Leeds and Northup potentiometer and its accessories; Weston standard laboratory voltmeter, and milli-voltmeter with shunts; a Kelvin balance; Westinghouse precision ammeter, voltmeter, and wattmeter; and standard resistances and standard cells. In this room there is also a three-vibrator oscillagraph with photographic attachment, and a motor generator set consisting of a direct current motor direct connected to a set of four alternators giving a fundamental wave and the third, fifth and seventh harmonics, so arranged that any desired phase relation may be obtained between each of the harmonics and the fundamental.

The photometric laboratory has two dark rooms for photometric work proper. The equipment includes a station photometer; an illumination photometer; a Sharp-Miller photometer; a Flicker photometer; an integrating photometer consisting of an Ulbricht sphere two meters in diameter, with accessories, especially adapted for arc light photometry; rotating apparatus; a number of incandescent lamp candlepower standards; and a collection of various arc lamps, and a number of units representing various indirect and semi-indirect lighting systems. There is also a room for the demonstration and comparison of various light sources and systems.

The telephone laboratory is equipped with a switchboard for central energy operation, a switchboard for magneto operation, and a Strowger automatic switchboard with complete equipment for operation. There are also numerous telephones and a large collection of transmitters, receivers, induction coils, generators, bells, jacks, drops, keys, relays, retardation coils, condensers, repeating coils, lamps, etc., obtained from the Automatic Electric Co., Kellogg Co., Western Electric Co., and other manufacturers. The Bryan Telephone Company operates a complete switchboard, which is used to give local and long distance service from various stations on the campus. This exchange is available to the students in electrical engineering for test. In connection with this laboratory, the department maintains a complete wireless telegraph station of sufficient capacity to reach a number of commercial plants in the State. This equipment is available for study both from an engineering and an operating standpoint.

Through the generosity of the Otis Elevator Company, a complete motor-driven elevator winding-engine equipment of the most modern type, complete with all automatic switches, regulators, controllers, etc., has been donated and installed in the laboratory for test and demonstration purposes.

The department also has a number of frames of dynamos and motors and cores of transformers that are used by the students in learning to wind and repair these machines.

The equipment for the students in electrical engineering is augmented by the fact that the direct connected generators in the powerhouse, their exciters and measuring instruments, and the motors used to operate the Textile School, machine shop and other laboratories are available for tests as practical operating plants after the students have performed the required experiments on the machines located in the laboratory.

Students are urged to read the literature pertaining to their work, and for this purpose the department library is available. A reading table is maintained, on which are kept the current copies of a number of technical magazines. The technical books in the general library are also available to the students.

DEPARTMENT OF ENGLISH.

PROFESSOR FOUNTAIN, ASSOCIATE PROFESSOR THOMAS, ASSISTANT PROFESSORS BRESSLER, COFER, MR. GUNTER, MR. CLICK, MR. WILSON, MR. MULLIN, MR. BITTLE.

The aim of this department is to give students such training as will enable them to use their mother tongue readily and accurately. The instruction, therefore, is practical rather than theoretical. Frequent written exercises are required in all courses, and these exercises are not only carefully read by the instructor, but are also discussed in personal conferences with the students. In this way, each student has his attention called to his errors; and suggestions, especially adapted to his needs, are made.

The courses are as follows:

101, 102. Rhetoric and Composition. Freshman. First and second terms, 2 hours a week.

This course involves recitations, oral and written, readings from masterpieces of literature, composition writing, and personal conferences at hours to be arranged with the instructor.

(Required in Course I).

103, 104. Rhetoric and Composition. Freshman. First and second terms, 3 hours a week.

Similar to course 101, 102, except that more attention is given to technical writing.

(Required in all four-year engineering Courses).

201, 202. English Literature. Sophomore. First and second terms, 2 hours a week.

This course affords an opportunity for the students to obtain a general knowledge of English literature, the different stages of development being illustrated by the critical reading of selections of prose and poetry from representative writers of each period. Short papers on assigned subjects are required.

Prerequisite, English 101, 102, or 103, 104.

(Required in Courses I, X).

203, 204. English Composition. Sophomore. First and second terms, 1 hour a week.

This course is intended to give practice in organizing and writing longer themes than are required of the Freshmen. In addition to weekly compositions, the work involves recitations and personal conferences.

Prerequisite, English 101, 102, or 103, 104.

(Required in all four-year engineering Courses).

301, 302. Argumentation. Junior. First and second terms, 1 hour a week.

This course involves a study of the essentials of argumentation, and practice in drawing briefs. Personal conferences with the instructor are required.

(Required in all four-year Courses).

401, 402. Public Speaking. Senior. First and second terms, 1 hour a week.

The aim of this course is to help the student to a simple, direct manner of speaking. The work consists of the oral interpretation of some of the best orations, writing and delivering original pieces, and debating. Personal conferences with the instructor are required.

(Required in all four-year Courses).

11, 12. Grammar and Composition. First and second terms, 3 hours a week.

This course includes a thorough review of the essentials of English grammar, composition writing, and personal conferences with instructors.

(Required in Courses C, F, G, H).

21, 22. Practical Composition. First and second terms, 3 hours a week.

This course includes a review of the fundamental principles of composition. The written exercises are on practical subjects, especial attention being given to business correspondence. Personal conferences with the instructor are required.

(Required in Course E; elective in Course D).

51. Practical Composition. First term, 3 hours a week.

Same as course 21.

(Required in Courses C, F, H).

52. Practical Composition. Second term, 3 hours a week.

Same as course 22.

(Required in Courses C, H).

53, 54. Rhetoric and Composition. First and second terms, 3 hours a week.

Same as course 103, 104.

(Required in Course E).

DEPARTMENT OF ENTOMOLOGY.

PROFESSOR NEWELL, MR. BILSING.

The structure, classification, life histories, habits and economic importance of insects are the fundamental subjects on which the courses in this department are based. The courses are planned so as to give the student a knowledge of the anatomy and biology of insects and methods for their control. Proficient students may also elect such courses as will fit them for technical entomological work after graduation.

The department is equipped with models illustrating insect anatomy, dissecting, compound and binocular microscopes and a special entomological library. For the study of insecticides and spraying machinery, the department has a special insecticide building equipped with modern machinery and all the standard insecticides.

An apiary is also maintained, in which advanced students have an opportunity to study the habits of the honey bee and obtain a fundamental knowledge of apiculture.

The courses are as follows:

201. Systematic Entomology. Sophomore. First term, 2 hours a week; with practice.

In this course the student is taught the anatomy and physiology of insects as a basis for the development of practical control measures. The various orders of insects are studied, particular attention being given the forms that are decidedly injurious or beneficial. Considerable time is given to the biological aspect of the subject. The student also becomes familiar with entomological literature and with the methods by which insects are identified and classified.

Text: Entomology, Its Biological and Economic Aspects, *Folsom.*

Practice, 2 hours a week.

In the laboratory, the student studies both external and internal anatomy of insects, aided by models and by actual dissection. Drawings are made of insect structures and of specimens typical of the various orders.

(Required in Course X).

202. Economic Entomology. Sophomore. Second term, 2 hours a week; with practice.

This course is the logical continuation of course 201, and is open only to students who have successfully completed that course. The student, having become familiar with insect anatomy and physiology, here takes up the applied aspects of the subject. Special attention is given to the life history of the insects that are injurious to staple crops, fruit and truck crops, live stock, etc., together with measures for their control by means of intelligent farm practice and the use of insecticides. In connection with the practice work, the student is required to make a collection of local insects, consisting of at least fifty specimens, all of which must be properly pinned, labeled and correctly named. The importance of parasites and diseases and their utilization is also taught.

Text: Economic Entomology, *Smith.*

Practice, 2 hours a week.

In the practice, the student prepares various insecticides for use, learns how to handle spraying machinery, and, so far as opportunities permit, tests the effect of various control measures upon injurious insects. Methods of fumigation for the destruction of insects infesting nursery stock, buildings and stored produces are put into practice. Field trips are made to study injurious insects and for observing the effects of cultural methods or climatic conditions upon the destructiveness of insects.

Prerequisite, Entomology 201.

(Required in Course X).

301. Systematic Entomology. Junior. First term, 2 hours a week; with practice.

Same as course 201.

(Required in Course I).

302. Economic Entomology. Junior. Second term, 2 hours a week; with practice.

Same as course 202.

(Required in Course I).

303. Advanced Economic Entomology and Experimentation. Elective. Junior. First term, 1 hour a week; with practice.

This course is especially arranged for students intending to follow entomological work after their graduation from college. Particular attention is given to economic problems in entomology, methods of entomological research and field methods of insects investigation and control. The course also embraces insectary methods of breeding insects, studies of entomogenous fungi and of insects parisitism, methods of photographing insects, etc.

Lectures, supplemented with literature.

Practice, 4 hours a week.

Prerequisite, Entomology 201, 202.

(Open to students in Courses I, X).

304. Advanced Systematic Entomology. Elective. Junior. Second term, 4 hours a week. Practice.

This course is intended for students fitting themselves for Experiment Station or Extension Work of an entomological nature. The course embraces the collection and classification of insects in all orders, a study of insects taxonomy and the use of literature in identifying insects.

Prerequisite, Entomology 201, 202.

(Open to students in Courses I, X).

306. Animal Parasites. Elective. Junior. Second term, 2 hours a week; with practice.

This course consists of a study of insects and other arthropods which are parasitic upon domestic animals or which are concerned in the transmission of diseases of live stock, and means for their eradication or control.

Lectures, supplemented with literature.

Practice, 2 hours a week.

Prerequisite, Entomology 201, 202.

(Open to students in Courses I, X).

401. Seminar. Elective. Senior. First term, 1 hour a week.

In the weekly seminar the students discuss recent discoveries and progress in the entomological field with members of the Department staff and with each other. Preparation of special papers and reviews of entomological publications are required of the student from time to time.

Prerequisite, Entomology 201, 202.

(Open to students in Courses I, X).

402. Apiculture. Elective. Senior. Second term, 2 hours a week; with practice.

This course is so arranged as to give the student a practical working knowledge of beekeeping which will prepare him for conducting a small apiary in connection with other farm work or for entering commercial beekeeping as a vocation. The course includes a study of the biology and life history of the honey bee, methods of making hives and equipment, management of swarming, honey plants, harvesting and marketing of honey, wax production and refining, control of bee diseases and elementary queen-rearing. The Department is equipped with an apiary of medium size, with facilities for work in out-apiaries, hives, tools, wax-presses, automatic extractors and all standard equipment used in modern beekeeping.

Lectures and recitations, with supplementary reading.

Practice, 2 hours a week.

(Open to students in Courses I, X).

24. Elementary Economic Entomology. First year. Second term, 2 hours a week; with practice.

A general outline of the classification of insects is here offered, together with a sufficient study of anatomy and biology for the understanding of control measures. Particular attention is given to injurious insects of field, garden, and orchard, together with the methods and insecticides by which they may be controlled.

Text: Elementary Entomology, *Sanderson* and *Jackson.*

Practice, 2 hours a week.

The practice consists of sufficient dissection and study in the laboratory to familiarize the student with the different orders of insects. This is supplemented by field studies of injurious forms, together with the preparation of various insecticides and their use.

(Elective in Course D).

51. Systematic Entomology. Second year. First term, 2 hours a week; with practice.

Same as course 201.
(Elective in Course D).

52. Economic Entomology. Second year. Second term, 2 hours a week; with practice.

Same as course 202.
(Elective in Course D).

54. Elementary Economic Entomology. Second year. Second term, 2 hours a week; with practice.

Same as course 24.
(Required in Course C).

DEPARTMENT OF HISTORY.

PROFESSOR CHASTAIN, MR. ABSHIRE.

It is the aim of this department to have the student learn that history deals with the life of a nation in the process of growth; that the content of history is not a dead thing, but that it lives and moves; that it is dynamical and not statical; that it obeys the law of continuity; that there are no breaks or leaps; that development may hasten or may slacken, but that it is always continuous, and that the operation of the law of continuity makes history a unit. The study of the life of any people reveals certain characteristics common to the history of all civilized nations; there will be found five well marked phases—a political, a religious, an educational, an industrial, and a social phase. The student should understand that history is one continuous current moving on toward one purpose—not one destiny for govenrment, another for church, and so on, but that all these make one life with one destiny. The student is encouraged to trace all these lines of growth, taking each great event and each series of events, discovering to what extent all institutions are affected.

Students are urged to make constant use of the College library, which contains a great many histories and biographies from which they may be able to pursue a systematic investigation for themselves.

The courses are as follows:

201, 202. Modern Europe. Sophomore. First and second terms, 3 hours a week.

It is the purpose of this course to treat of those events ushering in and including the Modern Age; the rise of France under Louis XIV; the ascendancy of Prussia and Russia; the development of England's colonial supremacy; the French Revolution and the Napoleonic era. The evolution of constitutional government in the States of Europe; the unification of Germany and Italy; the Eastern question; and problems of modern governments.

Text: The Development of Modern Europe, Volumes I and II, *Robinson* and *Beard*.

(Required in Course X).

301. Industrial History of England. Elective. Junior. First term, 3 hours a week.

This course deals with the industrial development of England from earliest time to the present. The following subjects, among others, are considered: the manorial system; the disappearance of serfdom; the process and effect of enclosures; the guild system; the rise of the commercial classes; the industrial and agricultural revolution of the eighteenth century; the factory system and factory legislation; the free-trade movement; the beginning and growth of the modern labor movement.

Text: Industrial and Social History of England, *Cheyney*.

(Open to students in Courses I, X).

302. Industrial History of the United States. Elective. Junior. First term, 3 hours a week.

In general, the growth of the colonies from isolated agricultural communities to a complex industrial and commercial society is followed. In consideration of this process, attention is given to the following subjects: the business aspect of the early colonies; the colonial labor, commerce and manufactures; the economic aspect of the Revolution; the western movement and public lands; the expansion of manufactures and commerce after the War of 1812; the protectionist movement; the development of internal improvement; the economic causes of the Civil War; the commerce and expansion since the War.

Text: Industrial History of the United States, *Bogart.*

(Open to students in Courses I, X).

303, 304. American History and Government. Junior. First and second terms, 2 hours a week.

The purpose of this course is to fuse the study of social and industrial development with a study of political institutions—the keynote being found in the efforts of a hard people to appropriate and develop the greatest resources of the continent and there to realize their ideals of liberty and government. Therefore, the industrial development of the country finds an important place in the course. Attention is given to the following subjects: The European background of American History; Spain, France, and England in America; colonial self-government; the Revolution—its causes and importance; the Confederation and Constitution; the Federalist system; the Jeffersonian system; Jacksonian Democracy; westward extension; slavery and abolition; Civil War—its causes and importance; reconstruction, political, and economic; national problems; America as a world power; and the ideals of American government.

Text: American History, *Bassett.*

(Elective in Courses IV, VI, XI).

401. Industrial History of England. Senior. First term, 3 hours a week.

Same as course 301.

(Elective in Courses I, X).

402. Industrial History of the United States. Senior. Second term, 3 hours a week.

Same as course 302.

(Elective in Courses I, X).

403, 404. American History and Government. Senior. First and second terms, 2 hours a week.

Same as course 303, 304.

(Elective in Courses III, V, VII, IX).

DEPARTMENT OF HORTICULTURE.

PROFESSOR KYLE, ASSOCIATE PROFESSOR POTTS, ASSISTANT PROFESSOR HENSEL, MR. COWART.

The aim of this department is twofold: First, to develop scientific horticulturists; second, to turn out practical fruit and truck growers. This statement does not mean there are two distinct courses, but that when a student finishes the course he is prepared to engage in either the scientific or the practical side of horticulture. The course of study covers somewhat fully the different lines of horticulture and embraces plant propagation, vegetable gardening, orchard culture, nut culture, plant breeding, viticulture, spraying, citrus fruits, experimental horticulture, besides special work in landscape art, floriculture and forestry. In order to develop the practical side of the student, he is given from two to four hours a week in outdoor work, which comprises practice in budding, grafting, pruning, thinning fruit, spraying, setting out orchards, and planting vegetables. He is taught how to mix and apply fertilizers, and he is also shown the best methods of cultivating the different horticultural crops. The department now has growing on the College grounds standard varieties of peaches, paper-shell pecans, grapes, persimmons, pears, plums and figs, and small fruits consisting of blackberries and dewberries.

Besides the theoretical and practical work given at the College, the student is sent out during the summer to work in the orchards and truck farms of the largest growers, not only in this but several of the other leading fruit States. Excursions are arranged during the school year for visiting the largest and most successful fruit and truck farms in the State. This not only gives the young man a good knowledge of the horticultural work done in his own State, but also enables him to become personally acquainted with some of the best practical horticulturists of the United States, and at the same time familiarize himself with the methods used by such men.

The courses are as follows:

201. Plant Propagation and Orcharding. First term, 3 hours a week; with practice.

Lectures and recitations are given on the fundamental principles and methods of plant propagation and orcharding, including vegetables and fruits, and ornamentals.

Lectures and recitations.

Practice, 2 hours a week.

Practice in propagation of plants from seed, budding grafting, and in planning, planting, pruning, spraying and general care of the orchard.

(Required in Course I).

202. Vegetable Gardening. Second term, 3 hours a week; with practice.

Detailed instruction in planting, equipping and operating vegetable gardens for home and commercial purposes, and practical demonstrations and experience in the field; a thorough discussion of the methods used in Texas in growing the most important vegetable crops.

Lectures and recitations.

Practice, 2 hours a week.

The practice is devoted to the building of hot-beds, cold-frames, the mixing and application of fertilizers, planting, cultivating, spraying and harvesting of vegetable crops.

(Required in Course I).

301. Spraying. Elective. Junior. First term, 1 hour a week; with practice.

The history and development of spraying in the United States and foreign countries is studied, special attention being given to the evolution of spraying machinery and to formulas.

Lectures.

Text: Spraying of Plants, *Lodeman.*

Practice, 4 hours a week.

Practical work in making various spraying mixtures for insects and diseases and applying the preparation to orchard and vegetable crops.

(Open to students in Courses I, X).

302. Plant Breeding. Elective. Junior. Second term, 2 hours a week; with practice.

This course is planned to give the student a better understanding of the benefits to be derived from the intelligent breeding of plants. The relation of horticultural varieties and hybrids to each other and to their parent species is discussed, together with the principles of pollination, crossing and hybridization.

Text: Plant Breeding, *Bailey.*

Practice, 2 hours a week.

Most of the practice work is devoted to the cross pollination of our common plants, and to the study of natural variations arising among garden plants.

(Open to students in Courses I, X).

303. Farm Forestry. Elective. Junior. First term, 2 hours a week; with practice.

A study of the relation of the general subject of forestry to agriculture. It embraces a study of the formation and development and utilization of the wood lot on the farm. It takes up in detail the planting of windbreaks and their effect on agricultural crops.

Lectures and recitations.

Practice, 2 hours a week.

Planning the wood lot in its relation to other agricultural crops.

(Open to students in Courses I, X).

304. Nut Culture. Elective. Junior. Second term, 2 hours a week; with practice.

This course includes a study of those nuts which are of the most economic importance. Special attention will be given to the native nuts. Top-working the native pecan and hickory to improved varieties of pecans will be fully discussed.

Lectures and recitations.

Practice, 2 hours a week.

Practice will be given in budding and grafting pecans in the nursery row; also in top-working our native pecans to improved varieties by means of the ring, patch and chip buds.

(Open to students in Courses I, X).

306. Sylviculture. Elective. Junior. Second term, 2 hours a week; with practice.

This course includes a study of the life history of trees; the effect of soil, climate and site on trees in the local forests; the effect of fire, insects and disease upon forests.

Lectures and recitations.

Practice, 2 hours a week.

Working out the life history of trees. Description of forest trees, and the reproduction of forests by natural and artificial means.

(Open to students in Courses I, X).

307. Introduction to Landscape Art. Elective. Junior. First term, 2 hours a week.

This is a cultural course given for the purpose of developing in the student a true appreciation of Landscape Art.

Illustrated lectures and recitations.

(Open to students in Courses I, X).

308. History of Landscape Design. Elective. Junior. Second term, 2 hours a week.

A comprehensive study of the development of landscape design.

Illustrated lectures and recitations.

(Open to students in Courses I, X).

401. Pomology. Elective. Senior. First term, 3 hours a week; with practice.

A comprehensive study is made of the evolution of our native fruits. Special attention is given to the grape, plum, mulberry, apple, cherry, blackberry, dewberry, strawberry, persimmon, etc.

Lectures.

Text: Evolution of Our Native Fruits, *Bailey.*

Practice, 2 hours a week.

Practice in systematic pomology is given with such fruits as can be obtained during the season.

(Open to students in Courses I, X).

402. Experimental Horticulture. Elective. Senior. Second term, 2 hours a week; with practice.

Practical methods of planning and carrying out experiments, such as are in vogue by the most up-to-date experiment stations.

Practice, 4 hours a week.

The student will be required to plan his experiment, prepare the land, mix and apply the fertilizer, sow the seed, cultivate, spray and harvest the crop, and make a report on the results obtained.

(Open to students in Courses I, X).

403. History and Literature of Horticulture. Elective. Senior. First term, 1 hour a week.

This course is intended to acquaint the student with the important periods in the development of horticulture from the time of the Egyptians to modern times.

Lectures and assigned readings.

(Open to students in Courses I, X).

404. Subtropical Fruits. Elective. Senior. Second term, 2 hours a week; with practice.

A study of all the species of subtropical fruits grown in this country. Special attention is given to the growing of the hardier varieties that are adapted to the Texas coast region.

Lectures.

Text: Citrus Fruits and Their Culture, *Hume.*

Practice, 2 hours a week.

Practice in the propagation of the different species of subtropical trees; special demonstration work in protecting citrus trees from frost.

(Open to students in Courses I, X).

405. Bush and Vine Fruits. Elective. Senior. First term, 2 hours a week; with practice.

This course consists of a study of the propagation, culture, harvesting and marketing of small fruits, such as the blackberry, dewberry, strawberry, currant, grape, etc. Attention is given to the varieties best adapted to Texas conditions.

Lectures and recitations.

Practice, 2 hours a week.

Practice will be given in planning, planting, pruning, spraying and the general care of berry patches.

(Open to students in Courses I, X).

406. Canning. Elective. Senior. Second term, 1 hour a week; with practice.

The work will consist of lectures on methods of canning fruits and vegetables, the manufacture of preserves and fruit juices and evaporation and drying.

Lectures.

Practice, 4 hours a week.

Practice will be given in the operation of steam and hot water canners, in canning vegetables and fruits.

(Open to students in Courses I, X).

407. Introduction to Landscape Art. Elective. Senior. First term, 2 hours a week.

Same as course 307.
(Open to students in Courses I, X).

409. Ornamentals. Elective. Senior. First term, 2 hours a week; with practice.

This course embraces a thorough study of the ornamentals adapted to Southern conditions.
Lectures and recitations.
Practice, 2 hours a week.
Practice is given in the propagation and classification of ornamentals.
(Open to students in Courses I, X).

410. Forest Mensuration. Elective. Senior. Second term, 2 hours a week; with practice.

Determining the contents and rate of growth of individual trees and whole forests. Determining the height of standing trees. Measurement of logs and lumber by different units of measurements.
Lectures and recitations.
Practice, 2 hours a week.
Practical problems are given in measuring timber in forests, determining rate of growth, etc.
(Open to students in Courses I, X).

411. Sylviculture. Elective. Senior. First term, 3 hours a week; with practice.

A continuation of course 306.
(Open to students in Courses I, X).

413. Wood Preservation. Elective. Senior. First term, 2 hours a week; with practice.

Discussion of different methods of treating timber with preservatives.
Lectures and recitations.
Practice, 2 hours a week.
Practical exercises in wood preservation.

415. Landscape Design. Elective. Senior. First term, 3 hours a week; with practice.

This course gives the principles underlying Landscape Art. It also deals with the solving and drafting of problems dealing with Landscape Work.
Illustrated lectures and recitations.
Practice, 2 hours a week.
(Open to students in Courses I, X).

416. Landscape Design. Elective. Senior. Second term, 3 hours a week; with practice.

A continuation of course 415.
Practice, 2 hours a week.
(Open to students in Courses I, X).

21. Plant Culture and Propagation. First year. First term, 3 hours a week; with practice.

A modification of course 201. The first part is devoted to plant culture, and followed by a thorough discussion of the propagation of plants, including all the fruits, ornamentals, and vegetables.

Lectures and recitations.

Practice, 2 hours a week.

Practice work in the propagation of seedlings and the different forms of budding and grafting, layering, etc.

(Required in Course C).

22. Vegetable Gardening. First year. Second term, 3 hours a week; with practice.

Same as course 202.

(Required in Course C).

51. Plant Propagation and Orcharding. Second year. First term, 3 hours a week; with practice.

Same as course 201.

(Elective in Course D).

52. Vegetable Gardening. Second year. Second term, 3 hours a week; with practice.

Same as course 202.

(Elective in Course D).

53. Tree and Vine Fruits. Second year. First term, 3 hours a week; with practice.

A comprehensive study of the various kinds of fruit-orchards and vineyards, embracing the problems of location and soils, protection from insects and diseases, pruning, cultivating, harvesting and marketing.

Lectures.

Text: Principles of Fruit Growing, *Bailey.*

Practice, 2 hours a week.

Practical exercises in laying out orchards, spraying, etc.

Prerequisite, Horticulture 21.

(Required in Course C; elective in Course D).

54. Plant Breeding Second year. Second term, 2 hours a week; with practice.

This course is planned to give the student a better understanding of the benefits to be derived from the intelligent breeding of plants. The parent species is discussed, together with the principles of pollination, crossing and hybridization.

Text: Plant Breeding, *Bailey.*

Practice, 2 hours a week.

Most of the practice work is devoted to the cross pollination of our most common plants, and to the study of natural variations arising among garden plants.

(Elective in Course D).

55. Spraying. Second year. First term, 1 hour a week; with practice.

Same as course 301.
(Elective in Course D).

58. Nut Culture. Second year. First term, 2 hours a week; with practice.

This course includes a study of those nuts which are of the most economic importance. Special attention will be given to the native nuts. Top-working the native pecan and hickory to improved varieties of pecans will be fully discussed.

Practice, 2 hours a week.

Practice will be given in budding and grafting pecans in the nursery row; also in top-working our native pecans to improve varieties by means of the ring, patch and chip buds.

(Elective in Course D).

DEPARTMENT OF MATHEMATICS

Professor Puryear, Associate Professor R. F. Smith, Assistant Professors J. W. Mitchell, Michie, Garner, Jones, Nichols, Mr. Bond.

Instruction in this department is given by the use of approved textbooks, supplemented by oral explanations and informal lectures. The student's knowledge of the subject is tested daily at the blackboard, and in each course written solutions of selected problems and review exercises involving the work of preceding courses are frequently assigned.

The courses are as follows:

101, 102. Algebra. Freshman. First and second terms, 3 hours a week.

A rapid review of elementary topics, followed by the study of quadratic equations, the binomial theorem, variation, the progressions; complex numbers, theory of equations, logarithms, limits, undetermined coefficients.

Text: College Algebra, *Rietz* and *Crathorne.*

(Required in all four-year engineering Courses).

103. Plane Trigonometry. Freshman. First term, 3 hours a week.

Goniometry, review of logarithms, solution of right triangles, problems of heights and distances, properties of triangles, solution of oblique triangles, geometrical applications, mensuration.

Text: Plane and Spherical Trigonometry, *Taylor* and *Puryear.*

(Required in all four-year Courses).

104. Analytics. Freshman. Second term, 3 hours a week.

The straight line, transformation of co-ordinates, circle, ellipse, parabola, hyperbola.

Text: Analytic Geometry, *Nichols.*

Prerequisite, Mathematics 101, 103.

(Required in all four-year engineering Courses).

201. Analytics. Sophomore. First term, 1 hour a week.

The general equation of the second degree, higher plane curves, introduction to analytic geometry of three dimensions.

Prerequisite, Mathematics 104.

(Required in all four-year engineering Courses except VI).

203, 204. Differential and Integral Calculus. Sophomore. First term, 4 hours, second term, 3 hours a week.

Differentiation, infinite series, expansion of functions, indeterminate forms, functions of several variables, tagent and normal, curvature,

maxima and minima; integration, lengths, areas, volumes, moments of inertia; centres of gravity, examples of differential equations.
Prerequisite, Mathematics 104.
(Required in all four-year engineering Courses except VI).

11, 12. Plane Geometry. First year. First and second terms, 3 hours a week.

Definitions, rectilinear figures, the circle, similar polygons, areas of polygons, regular polygons, measurement of the circle.
Text: Plane Geometry, *Wentworth-Smith.*
(Elective in Course D).

13, 14. Shop Mathematics. First year. First term, 4 hours, second term, 3 hours a week.

An elementary course in algebra, geometry and trigonometry, with special reference to practical applications to shop problems.
Text: Advanced Shop Mathematics, *Norris* and *Craigo.*
(Required in Courses F, G, both terms; in Course L, first term).

15. Plane Geometry. First year. First term, 6 hours a week.

Same as course 11, 12.
(Required in Course E).

16. Algebra. First year. Second term, 3 hours a week.

Graphs, linear systems, square root and radicals, quadratics, exponents.
Text: First Course in Algebra, *Hawkes, Luby* and *Touton.*
(Required in Course E; elective in Course D).

17. Solid Geometry. Freshman. First term, 3 hours a week.

Definitions, lines and planes in space, dihedral angles, polyhedral angles, polyhedrons, the cylinder, cone and sphere.
Text: Solid Geometry, *Wentworth-Smith.*
(Required as an extra study of Freshman in the School of Engineering who do not present solid geometry for admission).

18. Solid Geometry. First year. Second term, 3 hours a week.

Same as course 17.
(Required in Course E).

53. Plane Trigonometry. Second year. First term, 3 hours a week.

Same as course 103.
(Required in Course E).

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR FERMIER, PROFESSOR H. E. SMITH, MR. HERRINGTON, MR. CHAPPELLE, MR. BECHERT, MR. C. E. HANSON, MR. G. W. HANSON, MR. MARTINSON.

The work of this department is carried on in both class room and shop or laboratory, the two lines of work being designed to emphasize and reinforce each other.

In the shop practice the student works with woods and various kinds of metals, getting experience in the handling of tools and materials and acquiring a knowledge of the properties of materials by personal contact. Although he acquires a certain skill in the handling of tools, etc., yet the main result sought is not the training as a mechanic. Instead, it is expected that he will chiefly get the clear and definite ideas of the behavior of materials under the various technological processes which can be acquired only by personal contact and experience.

The class room work is taught by text-books, lecture and many numerical examples. The student is expected to understand the underlying principles and to show their application in the solution and discussion of engineering problems of various sorts.

In the design rooms the instruction is given by lecture and reference books, together with practice, using the methods of drafting rooms of manufacturing concerns.

In the latter part of his course the student is expected to examine, operate, test and report on the various pieces of apparatus and equipment in the laboratory, shops and powerhouse.

The courses are as follows:

101, 102. Elementary Mechanics. Freshman. First and second terms, 2 hours a week.

The work of this course consists of lectures, quizzes, and problems involving those principles of mechanics which are more commonly used in all branches of engineering.

No text-book is required, but each student is required to keep a notebook to contain the lectures and problems.

The second term's work must be preceded by Mathematics 103.

(Required in all four-year engineering Courses except VII, IX).

103. Carpentry. Freshman. One term, 4 hours a week. Practice.

Shop practice in the use of the common bench tools and power machinery for working in wood, as applied to joinery, elements of construction, and cabinet making.

(Required in all four-year engineering Courses except VII, IX).

104. Forging. Freshman. One term, 4 hours a week. Practice.

Shop practice in the use of blacksmith and general forge tools in the working of iron and steel. Also tempering, annealing, welding, case-hardening, etc.

(Required in all four-year engineering Courses except VII, IX).

NOTE.—Courses 103 and 104 together constitute a year's work, 4 hours a week. The Freshman students in Courses III, IV, V, VI and VIII will be divided into two groups at the beginning of the first term; one group will begin with course 103 and the other with course 104. At the beginning of the second term the groups will each change to the other work.

201. Pattern Making and Foundry Work. Sophomore. First term, 4 hours a week. Practice.

Shop practice in pattern making, molding, and casting in iron, brass, etc.
(Required in Courses III, V).

202. Pattern Making and Foundry Work. Sophomore. Second term, 4 hours a week. Practice.

A continuation of course 201.
(Required in Course III).

203. Principles of Manufacturing. Sophomore. First term, 1 hour a week.

This course consists of lectures and quizzes (1) on hand and power-tools and machines for working wood and metals, their construction, care and operation; (2) on the technological properties of materials of shop manufacture; and (3) on processes of manufacture.
No text-book is required, but a notebook is required for the lectures.
(Required in Course III).

205. Elementary Steam Engineering. Sophomore. First term, 3 hours a week.

This course aims to give the student such a knowledge of steam power plant equipment as will enable him to understand the operation of the same, and serve as a foundation for subsequent study and calculation along these lines. Valve gears, valve diagrams, and indicator practice are also included.
Text: Elementary Steam Engineering, *Spangler.*
Prerequisite, Mathematics 103, Mechanical Engineering 101, 102.
(Required in Courses III, V, VI).

206. Elementary Steam Engineering. Sophomore. Second term, 3 hours a week.

Same as course 205.
(Required in Course VIII, XI).

208. Kinematics. Sophomore. Second term, 3 hours a week.

Without taking account of the strength of the structure, this course takes up the study of motion, velocity ratios, comparative forces, etc., in machines and their elemental parts.
Text: Machine Design, Part I, *Jones.*
Prerequisite, Mathematics 104.
(Required in Courses III, V, VI).

210. Kinematic Drawing. Sophomore. Second term, 3 hours a week. Practice.

Practice in the construction of kinematic diagrams.
Must be accompanied by Mechanical Engineering 208.
(Required in Course III).

212. Engineering Mechanics. Sophomore. Second term, 2 hours a week.

A study of pure mechanics as the foundation principles involved in the analytical solution of problems concerning the statics and dynamics of a material point and of a rigid body; with numerous numerical examples from practical engineering questions.
Prerequisite, Mathematics 104, Mechanical Engineering 101, 102.
(Required in Course III).

301. Steam Engines and Boilers. Junior. First term, 2 hours a week.

A study of fuels; combustion; the generation of steam; the construction, operation, care, design and testing of boilers of various types; together with the design of chimneys and other means of producing draft.
Text: Steam Boilers, *Parsons.*
Prerequisite, Mathematics 204, Chemistry 103, 104, Physics 201, 202.
(Required in Courses III, V; elective in Courses VII, XI).

302. Steam Engines and Boilers. Junior. Second term, 3 hours a week.

A study of the elementary thermodynamics of heat engines; also the mechanics, construction, design, operation and testing of the steam engine. Valve gears, indicators, governors, etc., are also studied.
Text: Steam Engines, *Creighton.*
Prerequisite, Mechanical Engineering 301.
(Required in Courses III, V; elective in Course XI).

303, 304. Machine Design. Junior. First and second terms, 5 hours a week. Practice.

This course consists of practice in the design of machine elements, and their proper representation by finished shop drawings.
Text: No text will be required, but each student is urged to secure a Kent's or Suplee's hand-book.
Prerequisite, Mathematics 204, Mechanical Engineering 212; must also be preceded or accompanied by Civil Engineering 305 and Mechanical Enginereing 313.
(Required in Course III; elective in Course XI).

305. Elementary Steam Engineering. Junior. First term, 3 hours a week.

Same as course 205.
(Required in Courses IV, XII).

309. Machine Shop. Junior. First term, 6 hours a week. Practice.

Practice in bench and machine-tool work in metals. This includes chipping, scraping, filing, babbiting, pipe fitting, drilling, turning, boring, grinding, milling machine work, etc.

Prerequisite, Mechanical Engineering 103, 104.
(Required in Courses III, V; elective in Course XI).

310. Machine Shop. Junior. Second term, 5 hours a week. Practice.

A continuation of course 309.
(Required in Course III; elective in Course XI).

311, 312. Seminar. Junior. First and second terms, 1 hour a week.

General discussions of engineering problems, with special reference to current topics, contracts, specifications, cost systems, and scientific management.

Text: No text-book is used, but much outside reading is required.
Prerequisite, Junior Classification.
(Required in Course III).

313. Engineering Mechanics. Junior. First term, 3 hours a week.

A continuation of course 212, with special reference to dynamics of rotation, work, energy, friction, impact, etc.
(Required in Course III).

315. Engineering Laboratory. Junior. First term, 3 hours a week. Practice.

A modification of courses 403 and 404.
(Required in Course VIII).

316. Engineering Laboratory. Junior. Second term, 3 hours a week. Practice.

Same as course 315.
(Required in Course IV).

317. Engineering Mechanics. Junior. First term, 4 hours a week.

A modification of courses 212 and 313.
(Required in Course V).

321. Machine Shop. Junior. Second term, 4 hours a week. Practice.

A modification of course 309.
(Required in Course VI).

333. Carpentry. Junior. First term, 4 hours a week. Practice.

Same as course 103.
(Elective in Course VII).

334. Structural Steel. Junior. Second term, 3 hours a week. Practice.

The work of this course embraces elementary forging in iron and mild steel, also the elements of fabrication of steel structures.
(Elective in Course VII).

401, 402. Engineering Design. Senior. First and second terms, 4 hours a week. Practice.

A study of the design of engines, pumping machinery, etc., from the standpoint of their strength, speed regulation, construction, and economical performance; also a study of the design of power plants, as to capacities and arrangements.

Prerequisite, Mechanical Engineering 301, 302, 303, 304.

Text: No text-book is required, but the student must have a Kent's or a Suplee's hand-book.

(Required in Course III; elective in Course XI).

403, 404. Engineering Laboratory. Senior. First term, 6 hours, second term, 4 hours a week. Practice.

Instruction and practice in testing gauges, indicators, fans, pumps, boilers, engines, etc.; also a study of the actual mechanical operation of various machines.

In addition to the work with the apparatus, the student will be expected to make calculations and written reports on the investigations and the results obtained.

Text: Power Plant Testing, *Moyer.*

Prerequisite, Mechanical Engineering 301, 302.

Prerequisite for abridged courses, Mechanical Engineering 205, 206, or 305.

(Required in Course III; elective in Course XI).

405, 406. Engineering Design. Senior. First and second terms, 3 hours a week.

Drawing room practice in the design of machines and power plants.

Text: Steam Power Plants, *Gebhardt.*

Prerequisite, Mechanical Engineering 301, 302.

(Required in Course III; elective in Course XI).

407, 408. Thermodynamics. Senior. First term, 4 hours, second term, 2 hours a week.

This embraces a study of the effects of heat upon gases, and the application of thermodynamic laws and principles to the steam engine, gas engine, hot-air engine, injectors, calorimeters, etc., together with a study of heat efficiencies of these machines and instruments.

Text: Applied Thermodynamics for Engineres, *Ellis.*

Prerequisite, Mechanical Engineering 301, 302.

(Required in Course III; elective in Course XI).

410. Gas Engines. Senior. Second term, 2 hours a week.

The application of the principles of thermodynamics to the design of gas engines. Also the study of the different cycles. methods of governing, and some details of construction, operation and care of various types of gas engines and other internal combustion motors.

Text: The Gas Engine, *Jones.*

Prerequisite, Mechanical Engineering 407.

(Required in Course III; elective in Course XI).

415, 416. Engineering Laboratory. Senior. First and second terms, 3 hours a week. Practice.

A modification of course 403, 404.
(Required in Course V).

23. Carpentry. First year. First term, 4 hours a week. Practice.

Same as course 103.
(Required in Courses F, G, H).

24. Forging. First year. Second term, 4 hours a week. Practice.

A modification of course 104.
(Required in Course H).

25. Forging. First year. First term, 4 hours a week. Practice.

Same as course 24.
(Required in Courses F and G).

31, 32. Elementary Mechanics. First year. First and second terms, 2 hours a week.

Same as course 101, 102.
(Required in Courses F, G).

34. Engineering Laboratory. First year. Second term, 3 hours a week. Practice.

A modification of courses 403 and 404, specially planned for the Two-Year Course for Power Plant Operators, in which course it is required.
Prerequisite, Mechanical Engineering 45, 46.
(Required in Course G).

35, 36. Elementary Mechanical Engineering. First year. First and second terms, 2 hours a week; with practice.

This course consists of a study of elementary problems involved in engineering, with special reference to mensuration and power transmission. Numerous numerical examples are solved.
Practice, 2 hours a week.
(Required in Course E).

37, 38. Shop Work. First year. First and second terms, 4 hours a week. Practice.

This course includes practice in bench work in wood, and a limited amount of wood turning and forging. It is planned with a view of being helpful to those students who expect to take up Manual Training teaching.
(Elective in Course D).

39. Elementary Wood Work. First year. First term, 4 hours a week. Practice.

This course is similar to course 23, but is more elementary and involves less of working to dimensions, and less of construction with joinery. It involves also some practice in chip and relief carving.

(Required in Course E).

40. Elementary Metal Work. First year. Second term, 4 hours a week. Practice.

In this course the student will be given instruction in the behavior of metals under the action of tools. Laying out, forming, soldering, riveting and brazing of sheet metals; metal spinning, and a small amount of forging are among the things involved in this course.

(Required in Course E).

42. Machine Shop. First year. Second term, 6 hours a week. Practice.

A modification of course 309, 310.

(Required in Courses F, G).

44. Engineering Laboratory. First year. Second term, 3 hours a week. Practice.

A modification of course 403, 404.

(Required in Course G).

45, 46. Steam Engines and Boilers. First year. First and second terms, 4 hours a week.

A modification of course 301, with no prerequisite except entrance requirements.

(Required in Course G).

47. Pattern Making and Foundry. First year. First term, 4 hours a week. Practice.

A modification of course 201, 202.

(Required in Courses F, G).

51, 52. Elementary Mechanics. Second year. First and second terms, 2 hours a week.

Same as course 101, 102.

(Required in Course E).

53, 54. Technical Literature. Second year. First and second terms, 2 hours a week.

A study of magazines and papers covering the field of technical work, with special reference to current literature of Mechanical Engineering.

(Required in Course G).

55. General Mechanical Engineering. Second year. First term, 3 hours a week.

A study of steam power plant equipment, including steam turbines, compound engines, auxiliaries, etc., and the general planning and arrangement of power plant equipment.

(Required in Course G).

56. Pumping Machinery. Second year. Second term, 3 hours a week.

A study of different methods and machines used in pumping water.

(Required in Course G).

57. Internal Combustion Engines. Second year. First term, 3 hours a week.

In this course the student will study gas producers, and the various internal combustion motors, with special reference to their efficient performance and their troubles.

(Required in Course G).

58. Refrigeration. Second year. Second term, 2 hours a week.

A practical study of refrigerating methods and machines.

(Required in Course G).

59, 60. Machine Design. Second year. First and second terms, 3 hours a week; with practice.

A study of the materials of machines, elements of strength and materials, elements of mechanism, principles of lubrication, commercial standards of machine supplies and parts. Also a study of the application of these to the design of machine elements and machines.

Practice, first and second terms, 3 hours a week.

Students will be given problems involving the principles taught in the class room, and will be required to make the calculations necessary for the design of machine elements or parts.

The student will also be given practice in the correct representation of the part designed by making working drawings of the parts and machines. So far as practicable, opportunity will also be given the student to make tracings and blue prints.

(Required in Course G).

61. Machine Shop. Second year. First term, 4 hours a week. Practice.

A continuation of course 42.

(Required in Course G).

62. Machine Shop. Second year. Second term, 3 hours a week. Practice.

A continuation of course 61, including tool-making and tool-dressing.

(Required in Course G).

63, 64. Engineering Laboratory. Second year. First and second terms, 3 hours a week. Practice.

A continuation of course 44.
(Required in Course G).

65, 66. Engineering Laboratory. Second year. First and second terms, 3 hours a week. Practice.

A modification of course 44.
(Required in Course F).

68. Power Plants. Second year. Second term, 4 hours a week. Practice.

In this course the student will be required to serve as helper in the College power plant at duties which will give him an experience with practical power plant operation.
(Required in Course G).

70. Power Plants. Second year. Second term, 2 hours a week. Practice.

A modification of course 68.
(Required in Course F).

73. Elementary Steam Engineering. Second year. First term, 3 hours a week.

Same as course 205.
(Required in Course E).

74. Power Transmission. Second year. Second term, 3 hours a week.

A study in dynamometers and the transmission of power by belts, ropes, shafting, etc.
(Required in Course E).

75, 76. Steam Engines and Boilers. Second year. First and second terms, 4 hours a week.

Same as course 45 and 46.
(Elective in Course F).

77. Pattern Making and Foundry Work. Second year. First term, 4 hours a week. Practice.

Same as course 41.
(Required in Courses E, H).

78. Machine Shop. Second year. Second term, 4 hours a week. Practice.

A modification of course 309.
(Required in Courses E, H).

EQUIPMENT.

In the carpenter shop are excellent double work benches of special design, equipped with quick-acting vises, and the saws, planes, chisels, etc., ordinarily found in a carpenter's kit, each student having a set of edge tools assigned to him alone. Supplementing these are a number of special tools in the tool room.

The wood-turning equipment consists of a number of smaller lathes for the ordinary work, and two large pattern-maker's lathes, which admit of wide application. Besides the lathes there are band, jig and circular saws, planer, jointer, and grindstones, power-driven, for the students' use.

The forge-room equipment consists of one 250-pound steam hammer, emery wheels, twenty-eight forges, all having power blast and exhaust, and a number of hand forges, the necessary anvils, tongs, and other small tools usually found in the forge equipment.

In the machine shop the equipment is now very satisfactory. It consists of a full line of lathes, grinders, milling machines, automatic machines, etc., so that the student has an opportunity to learn how to operate the ordinary shop tools and machines. The equipment has been recently increased by the addition of a two-spindle lathe. Another of the lathes is a most approved type of motor-driven, geared-head precision machine, and is typical of the best of its kind. The automatic machine is one of the most highly specialized machines for the rapid production of duplicate small parts, and shows the student how such parts can be most cheaply made when the number needed warrants the employment of such means. The tool room contains a large assortment of taps, dies, hand drills, etc., and of drills, reamers, chucks, and other machine accessories, as well as the small tools for laying out work and accurately and properly measuring the same; calipers, micrometers, steel scales, punches, surface plates, etc. Electric portable drills and gunder are also included in the equipment.

The engineering laboratory contains steam engines, gasoline engines, steam turbines, steam and power pumps, fans, water motors, a hot-air engine, condensers, air pump, injectors and a full line of indicators, gauges, pyrometers, thermometers, tachometers, speed indicators, weirs, pilot tubes, prony brakes, platform scales, etc., for conducting tests as outlined in course 403. A register-indicator-record centuri-meter has just been installed for use in connection with boiler feed measurement.

In addition, the laboratory has the use of all apparatus of the power plant, consisting of compound engines, Corliss and pumping engines of several different kinds; also the boilers of well-known makes and different types. The testing of these constitutes part of the Course in Mechanical Engineering.

The new equipment of the steam plant adds larger engines, condensers, air compressor, air lift pump, etc.

For the class room instruction there are numerous full-size wooden and metal models of different kinds of engines. also sections of actual air-brake equipment and other appliances and fittings for railway and power plant equipment.

Besides the above mentioned equipment might be mentioned the fact that manufacturers have in some instances deposited or donated for the use of the department a number of standard appliances. which prove valuable to the student.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

LIEUTENANT HILL.

The object of the military instruction given at this College is to develop the student physically by the systematic drill and exercise; to inculcate in students that unhesitating and subconscious obedience to constituted authority so essential to good citizenship; to qualify students to be company officers of volunteers or militia.

Graduates of this College may be given the opportunity by the War Department of taking the competitive examination for commissions as second lieutenant in the regular army; and their services are in demand as officers in the organization of native troops in the Philippine Islands.

The Cadet Corps, which includes all students in attendance at the College, is organized as a regiment of infantry, consisting of band and three battalions of four companies each. All military instruction is under the immediate charge of the Commandant.

The officers and non-commissioned officers are selected from the Senior, Junior and Sophomore classes. They are appointed by the Commandant upon the approval of the President. Their appointments are dependent upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

The military system regards a man for his inherent qualities of manhood and encourages ambition and self-reliance; it is an aid in the enforcement of discipline and encourages regularity in attendance upon academic duties; it tends to develop that sense of duty and honor that mark a man as a gentleman.

The courses are as follows:

201. Military Hygiene. Sophomore. First term, 1 hour a week.

The course covers the essential points in the care of troops, particular attention being paid to the following:

Personal hygiene; exercise and physical training; clothing and equipments; the water supply; foods and their preparation; the disposal of waste; the sanitation of camps, marches, and battlefields; the nature and effects of alcohol and other narcotics.

Text: The Elements of Military Hygiene, *Ashburn.*

(Required in Course XII).

202. Drill Regulations. Sophomore. Second term, 1 hour a week.

This course is designed to teach the fundamental principles of infantry drill, including guard duty and firing regulations. It includes infantry drill regulations through the school of the soldier, company and battalion both in close and extended order; also guard duty and firing regulations.

Text: Manual of Military Training, *Moss.*

(Required in all four-year Courses).

302. Tactics. Junior. Second term, 1 hour a week.

This course includes the combat principles of infantry, conduct of marches and camp sanitation.

Text: Manual of Military Training, *Moss.*

(Required in all four-year Courses).

401. Tactics. Senior. First term, 1 hour a week.

This course is a continuation of course 302 and is designed to give instruction in company administration, military signaling and sketching.

Text: Manual of Military Training, *Moss;* authorized War Department publications.

(Required in all four-year Courses).

Practice, all classes, first and second terms, 3 hours a week.

Infantry drill through the school of the soldier, company, battalion and regiment in close and extended order, advance and rear guard, outposts and marches, ceremonies and guard duty.

For Seniors and Juniors, target practice, military signaling, sketching and preparation of company papers.

402. International and Military Law. Senior. Second term, 4 hours a week.

The course covers the principles of International and Military Law, including the procedure of Courts-Martial.

Texts: International Law, *Davis;* Military Law and the Procedure of Courts-Martial, *Dudley.*

(Required in Course XII).

403. Military History of the United States. Senior. First term, 3 hours a week.

This course is designed to give a true and accurate Military History of the United States and to bring out the defects of our military policy.

Text: Military Policy of the United States, *Upton.*

(Required in Course XII).

404. Military Field Engineering. Senior. Second term, 4 hours a week.

This course covers the basic principles of military engineering.

Text: Manual of Military Field Engineering, *Beach.*

405. Fortifications and Intrenchments. Senior. First term, 2 hours a week.

This course embraces the principles of modern fortifications and field intrenchment.

Text: Field Fortifications, *Fiebeger;* Permanent Fortifications, *Fiebeger.*

(Required in Course XII).

406, 407. Ordnance and Gunnery. Senior. First and second terms, 3 hours a week.

The course covers the principles involved in the construction and use of war materials. It is divided into two parts, the theoretical and the descriptive.

The theoretical part includes the study of exterior and interior ballistics, the theories of gun and carriage construction, and the principles of gunnery.

The descriptive part of the course covers the processes of the manufacturing of powders, guns, projectiles and armor; and describes the small arms, cannon, machine and rapid-fire guns in the United States service.

Text: Ordnance and Gunnery, *Lissak.*

(Required in Course XII).

DEPARTMENT OF MODERN LANGUAGES

PROFESSOR CAMPBELL.

It is the object of this department to impart a practical knowledge of French, German, or Spanish, such as will benefit the student in the prosecution of a scientific career.

To this end, the text-books used and the method of imparting instruction are practical. French and German are taught because neither the specialist nor the general student can afford to be ignorant of these literatures; Spanish is taught in view of the rapidly growing intercourse between us and the Latin republics south of us.

Students coming to us, therefore, from the high schools of the State find here the opportunity to continue their linguistic studies by the side of the agricultural and mechanical branches, to which these studies lend effective aid.

In beginning courses, a thorough drill in pronunciation, the essentials of grammar, and colloquial exercises, is given through daily oral and written exercises. The reading of simple texts is taken up as early as possible.

The work of the advanced courses consists in the reading of selected texts and magazines, with incidental grammar review and drill in the use of colloquial idioms. Short dictation exercises are frequently given. Special stress is laid upon sight reading. Parallel reading of from 150 to 300 pages of selected prose works is required. In French and German, the reading is gradually adapted to the scientific work of other departments; the texts read in Spanish will be literary and commercial.

Two years of French or German are required in Course VIII; two years of German in Course X, and two years of French, German, or Spanish in Course XII. In all other courses, work in modern language is elective, as shown under the several curricula.

The courses are as follows:

211, 212. French. First and second terms, 3 hours a week.

Grammar and easy reading.

213, 214. German. First and second terms, 3 hours a week.

Grammar and easy reading.

215, 216. Spanish. First and second terms, 3 hours a week.

Grammar and reading.

321, 322. French. First and second terms, 2 hours a week.

Reading of scientific and other texts. Parallel reading.

323, 324. German. First and second terms, 2 hours a week.

Reading of scientific and other texts. Parallel reading.

325, 326. Spanish. First and second terms, 2 hours a week.

Reading of technical and commercial texts; business correspondence. Parallel reading.

DEPARTMENT OF PHYSICS.

PROFESSOR WRIGHT, ASSISTANT PROFESSORS MCPHEETERS, SKEELER, MR. MCADAMS, MR. BATES.

The courses in this department are designed to impart some knowledge of the various fields of physics, to teach exact reasoning from experiment to theory, and to prepare for further instruction in the more technical studies of the various departments. Instruction is given by recitation from standard texts, supplemented by numerous demonstrated lectures, quizzes, and practical problems. Physical laws and principles are illustrated from common experience and exemplified by industrial applications.

The laboratory work is designed to give the student a more intimate knowledge of the physical laws and to familiarize him with instruments of precision and methods of measurement. The student is required to present an accurate record of every experiment performed, including the theory involved. Considerable attention is paid to graphic methods of representing physical phenomena. Special attention is paid to the selection, designing, and construction of well-adapted equipment, and to the efficient administration of the laboratories.

Practical applications of the principles involved are emphasized throughout the courses.

The courses are as follows:

101, 102. Principles. Freshman. First and second terms, 2 hours a week; with practice.

This course includes the mechanics of solids, liquids, and gases; and the phenomena of heat, light, sound, electricity and magnetism. Instruction is given by recitations, quizzes, problems, and demonstrated lectures. The subject is treated primarily as a pure science, secondarily as a basis for the agricultural courses. Emphasis is laid upon the fundamental physical principles rather than upon the mathematical processes involved. (For general outline, see course 203, 204).

Practice, 2 hours a week.

The practice includes experiments about as follows: 9 in mechanics, 5 in heat, 4 in light, 2 in sound, and 10 in electricity and magnetism.

Prerequisite: Students admitted to the Freshman class conditionally and not presenting Physics for entrance will not be admitted to this course. See Entrance Requirements and Physics 11, 12.

(Required in Courses I, X).

203, 204. General. Sophomore. First and second terms, 3 hours a week; with practice.

The scope of this course is indicated by the following outline:

Mechanics: Fundamental units and laws involved in motion, force, power, energy, inertia, elasticity; laws of simple machines, liquids, and gases as they occur in the transformation of force and energy.

Heat: The nature of heat, thermometry, change of state, hygrometry, kinetic theory of gases, transmission of heat, and thermodynamics.

Light: Geometrical optics, lenses, optional instruments, photometry, velocity, wave length, interference, color, and polarization.

Sound: Wave motion and vibrations of elastic media; origin, transmission, reflection, and velocity of sound; characteristics of musical notes.

Electricity and Magnetism: Magnets and magnetic fields; chemical and mechanical production of current; laws and units of measurements of voltage, current, resistance, capacity, inductance; and the thermal effect of current.

In this course, particular stress is laid on the derivation of the various formulas necessary for a thorough understanding of the mathematical relations existing in physical determinations. Much emphasis is placed on practical problems furnished by the instructors.

Practice, first term, 2 hours; second term, 4 hours a week.

The practice includes about forty-five experiments, such as moments of force and inertia; modulus of elasticity; acceleration and coincident pendulum; centrifugal force; capillarity and surface tension; expansion of gases; latent and specific heat; thermal and electrical conductivity; mechanical and electrical equivalent of heat; polarized light, spectrum analysis, and wave length of light; the measurement of voltage, current, and resistance with standard instruments. The work is entirely quantitative.

Prerequisite, Mathematics 102, 103. (See Entrance Requirements). (Required in all four-year engineering Courses except V).

207, 208. General. Sophomore. First and second terms, 2 hours a week; with practice.

This course is identical with course 203, 204, with the omission of electricity and magnetism.

Practice, 4 hours a week, second term.

Prerequisite, Mathematics 102, 103. (See Entrance Requirements). (Required in Course V).

11, 12. Elementary. First and second terms, 3 hours a week; with practice.

Lectures, recitations, problems, and demonstrations in elementary mechanics, heat, sound, light, electricity and magnetism. The nature of the theory is indicated by the outline of the practice.

Practice, 2 hours a week.

The practice includes measurements of precision with vernier and micrometer calipers and balances; curve plotting; accurate determinations of length, volumes, densities, forces, moments, stress, expansion, heat exchange; refraction and reflection of light by various forms of lenses and mirrors; velocity of sound and the laws of vibrating strings; measurements of voltage, current, and resistance.

Multiple sets of apparatus permit laboratory experiments to be run parallel to the lectures and recitations.

(Required in Course E and of students admitted conditionally who do not present physics for entrance. See Entrance Requirements. Elective in Course D; course 11 is required in Course L).

EQUIPMENT.

The Department of Physics occupies seventeen rooms in the Civil Engineering Building, including four large class rooms with facilities for giving demonstrated lectures, four well-equipped laboratories, four offices, dark rooms, shop, and store rooms. These are supplied with alternating and direct current, storage battery, water, gas, and electric lights. The equipment is sufficient for a great variety of demonstration and laboratory work.

Mechanics of Solids, Liquid, and Gases: Apparatus for determining moment of inertia, centrifugal force, acceleration, mechanical and electrical equivalent of heat, Young's Modulus, etc.; micrometer and vernier calipers, rotators, U. S. Standard Measures, air pumps, hydraulic press, cathetometer, chronograph, balances, and many simple and compound machines.

Heat: Conductometers, thermopiles, expansion apparatus, various types of thermometers, and numerous calorimetric outfits.

Light: Polariscope, spectrometer, vernier microscope, Nicol's prisms, camera, projection lantern, optical bench, Hartl discs, heliostat, gratings, interferometer, and a great variety of lenses and mirrors.

Meteorological Instruments: Standard and maximum-minimum thermometers, Fortin and aneroid barometers, barograph, thermograph, hygrometer, anemometer, etc.

Sound: Sonometers, tuning forks, organ pipes, and wave motion apparatus.

Electrostatics: A very large static machine and accessories.

Current Electricity: Various types of batteries, rheostats, bridges, galvanometers, induction coils, telephone and telegraph fixtures, mercury arc and electrolytic rectifiers; ammeters, voltmeters, and motors for both alternating and direct current; and complete X-ray outfit.

The department has a well-chosen assortment of general and special accessories for use with the above apparatus.

The workshop is supplied with motor-driven machine lathe, rip saw, planer, and drill press; soldering outfit, stock materials, and the usual metal and wood working tools. In the shop, all repairs and improvements are made and the specially devised apparatus, requiring continual test, is constructed. Many of the most useful pieces of apparatus have been constructed in the shop. Economy in time and money is thus effected.

The department library contains several hundred volumes treating of pure physics and kindred subjects.

DEPARTMENT OF TEXTILE ENGINEERING

PROFESSOR BAGLEY, ASSISTANT PROFESSOR TATUM.

The Legislature having made a liberal provision for the establishment of a Textile School as a department of the College, a suitable building of modern cotton mill construction has been erected, and an excellent equipment has been secured. The building offers excellent opportunities for the study of the details of mill construction.

The equipment has been carefully selected with a view of having a wide variety of the leading makes of cotton mill machinery represented. This will afford the student the opportunity of becoming familiar with such machinery as that with which he is likely to come in contact in the mills of the country.

Instruction will be confined to the manufacture of cotton goods and a thorough training will be given in the manufacture of many classes of cotton yarns and fabrics.

Instruction is given by the use of text-books, lectures, recitation and the practical operation of the machines in the actual production of yarns and fabrics.

The instruction in this department is divided into four sections—Yarn Manufacturing, Weaving, Designing, and Chemistry and Dyeing. These subjects are so treated as to cover the manufacture of all classes of cotton yarns and fabrics.

The dye laboratory is a new addition and contains adequate machinery for instruction in dyeing and bleaching yarn and cloth.

The courses are as follows:

201, 202. Designing. Sophomore. First and second terms, 3 hours a week; with practice.

This course includes the classification of fabrics; the elementary principles of fabric structure; the explanation of various technical terms applied to designs and fabrics; the representation of drawing-in drafts and harness chains; the design of fancy shirting, madrases, and dress goods, etc.

Practice, 2 hours a week.

(Required in Course VI).

301, 302. Yarn Manufacture. Junior. First term, 4 hours, second term, 2 hours a week; with practice.

Recitations on the machinery and processes in the manufacture of coarse cotton yarns. Instruction is given with a view of imparting a general knowledge of the machinery and processes, including the study of the raw material; mixing; mixing machinery; construction and operation of feeder and picking machinery, carding, drawing, slubbing, roving, ring spinning, spooling, reeling, and twisting; calculations to determine the necessary gearing to produce given numbers, speeds and production.

Practice, 2 hours a week.

(Required in Course VI).

303, 304. Designing. Junior. First and second terms, 3 hours a week.

The design of lenos; two and three-ply fabrics; Jacquard designing, including the production of original designs, card cutting and lacing.

(Required in Course VI).

305, 306. Power Weaving. Junior. First and second terms, 3 hours a week; with practice.

Recitations and lectures on the construction, operation and adjustment of the plain and fancy looms; a study of the timing and setting of the various parts, and weave room calculations.

(Required in Course VI).

Practice, first term, 2 hours; second term, 3 hours a week.

307. Fabric Analysis. Junior. First term, 1 hour a week.

Dissection of small samples of fabrics with a view of their reproduction.

(Required in Course VI).

401, 402. Yarn Manufacture. Senior. First and second terms, 3 hours a week; with practice.

Recitations and lectures; a continuation and more exhaustive treatment of the subjects of course 301, 302. In addition, the study of warp preparation and of the machinery necessary for the manufacture of fine cotton yarns, including the sliver lap machine, ribbon lap machine and comber, and a study of the spinning mule, organizations for the manufacture of all classes of yarns and the preparation of fancy warps.

Practice, 4 hours a week.

(Required in Course VI).

404. Fabric Analysis. Senior. Second term, 1 hour a week.

A continuation of course 307.

(Required in Course VI).

405, 406. Sizing. Senior. First and second terms, 3 hours a week.

This course includes a thorough study of all materials used in sizing cotton yarns. The best methods of testing for adulterants commonly found in these materials are given, as is also the most modern methods of their application to the yarns. The machinery and its operation is carefully studied.

Must be preceded or accompanied by Chemistry 407.

(Required in Course VI).

407, 408. Weaving. Senior. First term, 3 hours a week; with practice.

Recitations and lectures on the construction, operation and adjustment of leno and Jacquard machines. A study of the different "tie-ups" use in Jacquard weaving. Sketching the most important motions on automatic and dobby looms.

Practice, first and second terms, 4 hours a week.
Prerequisite, Textile Engineering 305, 306.
(Required in Course VI).

410. Mill Management. Senior. Second term, 3 hours a week.

Lectures and recitations on the general management of cotton mills, including the study of fire protection, cost of production in the various departments, labor conditions and wages, care of mill and mill village.
(Required in Course VI).

412. Magazine Review. Senior. Second term, 1 hour a week.

Students will report in class on articles assigned them in the textile magazines.
(Required in Course VI).

11, 12. Designing. First year. First and second terms, 3 hours a week.

A modification of course 201, 202.
(Required in Course H).

13, 14. Yarn Manufacture. First year. First and second terms, 3 hours a week; with practice.

A modification of course 301, 302.
Practice, first term, 2 hours; second term, 4 hours a week.
(Required in Course H).

15, 16. Weaving. First year. First and second terms, 3 hours a week; with practice.

A modification of course 305, 306.
Practice, first term, 4 hours; second term, 2 hours a week.
(Required in Course H).

17. Cotton Classing. First year. First term, 2 hours a week. Practice.

The course covers the handling of the crop from the field to the mill; the method of establishing classes for cotton and their values, and practice in judging the value of samples.
(Required in Course C).

51, 52. Yarn Manufacture. Second year. First and second terms, 3 hours a week; with practice.

A modification of course 401, 402.
Practice, 4 hours a week.
(Required in Course H).

53, 54. Designing. Second year. First and second terms, 3 hours a week.

A modification of course 303, 304.
(Required in Course H).

55, 56. Weaving. Second year. First term, 3 hours a week; with practice.

A modification of 407, 408.
Practice, 4 hours a week.
(Required in Course H).

57, 58. Fabric Analysis. Second year. First and second terms, 1 hour a week.

Dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, cutting cards from original designs.
(Required in Course H).

60. Mill Management. Second term, 2 hours a week.

A modification of course 410.
(Required in Course H).

EQUIPMENT.

The building itself is a modern cotton mill model and is equipped in general with a automatic system of sprinkler heads for fire protection. The building is heated with steam and the atmosphere is kept in ideal condition for the manufacturing of cotton by a system of humidifiers. The power is furnished by electric motors conveniently distributed over the building, while the shafting, pulleys and hangers serve as an example of standard construction of such things.

In the department of yarn manufacture there is every equipment necessary to produce carded or combed yarns, and with it machines for making chain or slashed warps of either single or double yarns.

In the weaving room there are ten hand looms for the weaving of short fancy patterns. There are fourteen Northrop looms, which are entirely automatic and two plain looms for ordinary plain goods. There are two ordinary dobby looms, with box motion to insert four colors for filling; one dobby loom for weaving terry towels; one dress goods loom, with dobby and boxes for making a seven-colored pattern; one loom for weaving narrow Jacquard dress goods, and one with Jacquard loom for weaving table covers.

The finishing machinery is for ordinary ducks, sheetings or drills, and consists of an inspecting machine, railway sewing and rolling machine, a brushing and calendering machine, and a cloth-folding machine.

DEPARTMENT OF VETERINARY SCIENCE.

PROFESSOR FRANCIS, DR. MARSTELLER, DR. DUNN.

The class rooms and laboratory of this department are fairly well equipped with books, instruments, skeletons, diseased bones, tumors, parasites, charts, etc. A small hospital erected in 1908 affords opportunity to witness surgical operations and the management and treatment of sick animals.

The courses are as follows:

201. Anatomy and Physiology of Domestic Animals. Sophomore. First term, 2 hours a week; with practice.

This course is intended as an introduction to the study of Veterinary Science. It treats the fundamental processes of animal nutrition in detail, so that each student may be prepared to meet the problems that arise in the economic production of beef, pork, and dairy products.

Reference books: Physiology of Domestic Animals, *Smith;* Veterinary Anatomy, *Sisson.*

Practice, 2 hours a week.

During the practice period there will be demonstrations on the composition and circulation of the blood, dissections of the heart, bowels, nervous system, eyes, muscles, and studies of the bones, joints and ligaments. The class will be divided into sections of four each, so that each student can be graded on his work.

(Required in Course I).

202. Non-infectious Diseases. Sophomore. Second term, 2 hours a week; with practice.

A discussion of diseases of locomotion, digestion, respiration, etc., of a non-contagious nature.

Text: Veterinary Medicine, Vols. 1, 2, 3, 4, 5, *Law.*

Practice, 2 hours a week.

Prerequisite, Veterinary Science 201.

(Required in Course I).

301. Infectious Diseases. Elective. Junior or Senior. First term, 2 hours a week.

This lecture course will embrace a discussion of such diseases as anthrax, black leg, rabies, glanders, hog cholera, tuberculosis, Texas fever, infectious anemia, and their remedies. Especial mention will be made of those which may be injurious to public health through the consumption of meats or milk. Students have abundant opportunity to see hogs treated for cholera, and cattle for Texas fever.

Text: Pathology of Infectious Diseases of Animals, *Moore.*

Prerequisite, Biology 205, Veterinary Science 202.

(Open to students in Courses I, X).

302. Obstetrics. Elective. Junior or Senior. Second term, 2 hours a week; with practice.

A study of the reproduction of animals. During the consideration of the subject, many points on embryology, barrenness, artificial breeding, castration of males and females, are brought out.

Text: Veterinary Obstetrics, *Williams.*

Practice, 2 hours a week.

Practice will embrace a dissection of the reproductive organs, and following this are frequent opportunities for observing diseases and irregularities incident to reproduction.

Prerequisite, Veterinary Science 202.

(Open to students in Courses I, X).

303, 304. Anatomy. Elective. Junior or Senior. First and second terms, 3 hours a week; with practice.

This course will embrace a careful study of the anatomy of the horse, with dissections of the organs of locomotion, nutrition and the nervous system. It will be followed by a histological study of the tissues and organs.

Text: Veterinary Anatomy, *Sisson.*

Practice, 7 hours a week.

Prerequisite, Veterinary Science 201.

(Open to students in Courses I, X).

12. Animal Diseases. First year. Second term, 3 hours a week; with practice.

A popular course on the common diseases of animals on the farm, and how to prevent and cure them.

Text: Veterinary Studies for Agircultural Students, *Reynolds.*

Practice, 2 hours a week.

A hasty review of the essential features of animal nutrition precedes the practice proper. Dissection of the organs of nutrition is required, and following this an examination of the feet, eyes, etc., and the simpler surgical operations. Animals are examined for soundness, and each student must do the required work at its proper time.

(Elective in Course D).

52. Animal Diseases. Second year. Second term, 3 hours a week; with practice.

Same as course 12.

Practice, 2 hours a week.

(Required in Course C; elective in Course D).

THE TEXAS AGRICULTURAL EXPERIMENT STATION.

B. YOUNGBLOOD, DIRECTOR.

The Texas Agricultural Experiment Station system comprises the main station located at College Station and eleven correlated substations situated in various agricultural regions of the State. The Texas law relative to experiment stations provides that—

"The Experiment Station located at the Agricultural and Mechanical College in Brazos county, which is in part supported by the Federal government, shall remain at said point as a permanent institution. It shall be known as the Main or Principal State Experiment Station and shall continue, as heretofore, under the supervision of the Board of Directors of the Agricultural and Mechanical College of Texas, which board shall have the authority to accept from the Federal government such aid in its support as is now or which may hereafter be provided by Congress. All other experiment stations of whatever character which may have heretofore been, or which may hereafter be, established, as provided in this act, shall be considered substations."

As the foregoing quotation from the law indicates, the main Texas Agricultural Experiment Station is located at College Station, Brazos county, Texas. It was organized January 25, 1888, and is supported by funds appropriated by the United States government. This support come in two distinct apportionments: The "Hatch Fund" of $15,000 annually was the original appropriation provided by an Act of Congress passed in 1887, and may be used for experiments, which may or may not be original in their nature. The "Adams Fund," also of $15,000 annually, can be used only for original investigations and experiments. This total of $30,000 annually appropriated by the Federal government supports the several divisions of investigations. The substations, which are supported by State appropriation entirely, afford opportunity for the various divisions of the Main Station to pursue investigations under varied agricultural conditions; hence the work of both the Main Station and substations is accessible at all times to students in agriculture, and, being fundamental, renders a valuable service. Aside from experimental results available, much practical and useful experience is gained by observations of plat work on the experiment station farm, and of feeding and breeding experiments, erection of silos, silage production and live stock judging, on the feeding and breeding substation farm, located nearby.

The several substations represent as may distinct agricultural regions. These substations are designated by number, as follows:

No. 1—Beeville, Bee county.
No. 2—Troup, Smith county.
No. 3—Angleton, Brazoria county.
No. 4—Beaumont, Jefferson county.
No. 5—Temple, Bell county.
No. 6—Denton. Denton county.
No. 7—Spur, Dickens county.
No. 8—Lubbock, Lubbock county.

No. 9—Pecos, Reeves county.

No. 10—College Station, Brazos county (Feeding and Breeding substations).

No. 11—Nacogdoches, Nacogdoches county.

The Main Station comprises ten divisions, each conducting investigations and experiments pertaining to that particular branch of agriculture. These divisions, with their principal lines of work, are as follows:

DIVISION OF VETERINARY SCIENCE.

DR. FRANCIS, DR. SCHMIDT.

The division of Veterinary Science has done much valuable work on Texas Fever or Tick Fever of Cattle, and is engaged in a further study of this problem and means of controlling it. This work has resulted in reducing the death rate from about 98 per cent to 2 per cent. Other important investigations are being pursued. Probably the most important of these is investigation of *Infectious Anemia,* an obscure, fatal disease of horses and mules, which causes a tremendous annual loss to the farmers and stockmen of Texas. In addition, other studies of diseases affecting farm animals are being made.

DIVISION OF CHEMISTRY.

DR. FRAPS, MR. CHEWNING, MR. RIDGELL, MR. HODGES.

The division of chemistry conducts investigations of the composition of Texas soils, the composition and digestibility of feeding stuffs, and important work with fertilizers. Other liens of investigation are being pursued, including studies of irrigation waters, composition of paints, and so forth. This division also has supervision of the Texas Fertilizer Control service, and has rendered much valuable assistance and information to the farmers of Texas. Many bulletins have been issued by this division, giving the results of its investigation. These are distributed by the Experiment Station.

DIVISION OF HORTICULTURE.

MR. NESS, MR. HOTCHKISS.

The division of horticulture is conducting plant breeding work with dewberries, blackberries, and other members of the genus *Rubus.* Other work is being done with Crown Gall and its control. Other important lines of work are being carried on at the Main Station, and on the various substations orchard and garden work is being conducted, from which much valuable information is expected. The work at College Station is under the supervision of Mr. Ness, while that on the substations is under the immediate charge of Mr. Hotchkiss.

DIVISION OF ANIMAL HUSBANDRY.

MR. BURNS, MR. JONES.

The division of Animal Husbandry conducts feeding and breeding investigations of vast importance to Texas agriculture. The work of this division in proving that silage is the most economical roughage for fattening beef cattle, alone, has proven of many thousand of dollars value to the feeders of Texas. This division has made tests of the relative values of silage and other roughages when fed with concentrates, and the results are given in bulletins of the Station. Work is also being done in sheep breeding, crossing the Karakule with the more common breeds, with a view to making a study of inheritance problems, and also producing a desirable breed of mutton sheep adapted to Texas conditions, which will also have desirable fur-bearing qualities. There has been established a good foundation herd of swine, and investigations are now under way looking to determining the most economical pasture for hogs, and also the most economical rations for brood sows, young growing hogs, and porkers. This work will no doubt prove of vast value to the swine industry of Texas. Investigations have recently begun with Angora goats, and, while this work has not progressed far enough to yield any definite results, the results will be awaited with much interest. The goat industry in Texas is an important factor in the live stock growing phase of Texas agriculture, and benefits arising from this work will have a far-reaching effect.

DIVISION OF ENTOMOLOGY.

Mr. Newell, Mr. Paddock.

The division of Entomology is making a study of inheritance in the honey bee and has made a considerable number of practical beekeeping experiments of importance to the agriculturists of the State. The life history of the wax-moth has been determined, methods of control perfected and a bulletin published upon the subject. Investigations are also under way on the development and control of the peach-tree borer, the turnip-louse, the Harlequin cabbage bug, weevils injurious to peas and beans, and other insects.

The Entomologist of the Station is ex-officio State Entomologist of Texas.

DIVISION OF AGRONOMY.

Mr. Conner, Mr. Leidigh, Mr. Jobson.

The division of Agronomy is conducting investigations with farm crops and soil improvement. Under farm crop studies, particular attention has been given to variety tests of corn and the improvement of this crop by securing pedigreed strains. Additional work with corn is being conducted with seeding rates and the effect of distribution of hills upon yield. A study of oats is being made, dealing particularly with the purification of certain types in Red Rust Proof and the improvement of these types by individual selection. The cotton work consists of a study of the fundamental principles of inheritance in cotton, particularly with relation to the correlation of unit characters, such as earliness and prolificacy, drouth resistance and earliness, and so forth. Additional cotton work embraces variety tests, seeding rate tests, and so forth. The legume work consists largely of variety tests of cowpeas, soy beans and peanuts for hay and seed production. Permanent pasture studies are being made. Under soil improvement, studies are being made of crops rotations versus continuous cropping, and of cultural methods and fertilizer work.

This division has been of immense service to the State of Texas by the introduction and dissemination of crops. Among these might be mentioned Sudan grass, which has been introduced into Texas and disseminated by this division. Sudan grass has been proved to be the best adapted hay grass to Texas conditions, and is today grown in all parts of the State. This introduction of Sudan grass, alone, has been of great service to Texas, and has brought the growers many thousands of dollars, to say nothing of an abundance of fine hay, which heretofore they have had to buy.

DIVISION OF PLANT PATHOLOGY AND PHYSIOLOGY.

DR. BLODGETT.

The division of Plant Pathology and Physiology is conducting investigations on the relation of soil types to tubercle production on leguminous plants, especially alfalfa. A careful study of the blossom-end blight of melons, and means of control, is also being made. A third line of investigation conducted by this division is a study of smut in corn, the results of which will be of great economic value to the State. This division is co-operating with the Bureau of Plant Industry, United States Department of Agriculture, in making a plant disease survey of Texas.

DIVISION OF FARM MANAGEMENT.

MR. WILLARD.

The division of Farm Management, which is conducted in co-operation with the Office of Farm Management, United States Department of Agriculture, is making a study of cropping systems and farm practices, including the cost of production of various crops and the economical distribution of farm labor. In other words, the study of the business conduct of the farm.

DIVISION OF POULTRY HUSBANDRY.

MR. CONWAY.

The division of Poultry Husbandry was established only during the past fall, and, therefore, has not had time to more than get well started. Model poultry houses, yards, fences, and so forth, have been erected on the feeding and breeding experiment farm, where this work will be carried on, and a small flock of pure-bred chickens secured. Preparations are being made for some very elaborate work during the coming season. Work with rations for young chicks, laying hens, and growing chickens, have been prepared by the Poultryman, and experiments will be conducted to determine the best rations for each class of fowls. The work of this division will answer a long-felt need of the poultry interests of Texas.

DIVISION OF FEED CONTROL SERVICE.

W. L. Boyett, State Feed Inspector; J. H. Rogers, Deputy Feed Inspector; W. H. Wood, Deputy Feed Inspector; T. H. Wolters, Deputy Feed Inspector; S. D. Pearce, Deputy Feed Inspector; J. M. Schaedel, Deputy Feed Inspector; W. M. Wickes, Deputy Feed Inspector; Chas. A. Felker, Chief Clerk; James Sullivan, Secretary.

The division of Feed Control Service has charge of the enforcement of the law regulating the sale of concentrated commercial feeding stuffs in the State of Texas, by virtue of an act of the Legislature empowering the Director of the Texas Experiment Station to enforce this law. The feed law requires the registration of all concentrated commercial feeding stuffs, showing the minimum content by percentage of protein and fat, and the maximum content by percentage of crude fiber contained in the feeding stuff, as well as true labeling and correct standard weights.

Samples of various feeding stuffs are drawn, from time to time, out of stock found on the market, by duly authorized inspectors, and sent to the Feed Control Service to be analyzed. The results obtained by these analyses are compared with the manufacturers' guarantees on file here, and it is determined whether or not the provisions of the law are being fulfilled.

The rulings specifying the names and guaranteed analyses of the various feeding stuffs offered for sale in the State are based on the chemical analyses of a large number of samples and a study of the methods of milling these products. It is the intention to continue to make investigations of the various feeding stuffs and the milling problems involved, in order that the provisions of the law may be enforced. This division is working in co-operation with the Federal Pure Food Control relative to interstate shipments, and in harmony with the National Association of Feed Control Officials, with which it is affiliated.

The results secured by the work of the various divisions of the Texas Experiment Station are reported from time to time in bulletin form, sent free to farmers of the State and others interested in agricultural development upon application to the Director. In addition to these bulletins involving more or less investigations into agricultural problems, press bulletins giving popular information in regard to agricultural topics, are sent out from time to time.

The Director and the various members of the Staff carry a heavy correspondence with farmers and stockmen of the State, disseminating in this way much useful and valuable information in regard to local conditions and agricultural problems in the various sections of the State.

The Experiment Station maintains an exhibit showing results of experiment work conducted, and places this exhibit at the National Corn Exposition, the Texas Farmers' Congress, and the State Fair of Texas, and in addition usually has on exhibit live stock at the National Feeders' and Breeders' Show at Fort Worth. This matter of exhibits has resulted in putting the farmers of the State in touch with much useful and valuable knowledge resulting from the work of the Station.

The Texas Agricultural Experiment Station is available at all times for service to the citizens of Texas, in any consistent manner. All communications intended for the Station should be addressed to

"THE DIRECTOR,
Texas Agricultural Experiment Station,
College Station, Texas."

THE TEXAS ENGINEERING EXPERIMENT STATION.

D. W. SPENCE, Director.

The Texas Engineering Experiment Station is composed of all the engineering departments of the College, and was organized for the purpose of affording a service to the industries of Texas similar to that afforded to the agricultural interests by the Agricultural Experiment Station; of assisting the urban population of the State in solving the technical problems of urban life; of investigating engineering and industrial problems of especial importance to Texas, and of disseminating information along these lines.

The Texas Engineering Experiment Station staff consists of the entire teaching force of the following departments of the College:

Architecture and Architectural Engineering.
Chemistry and Chemical Engineering.
Civil Engineering.
Economics.
Electrical Engineering.
Mechanical Engineering.
Physics.
Textile Engineering.

Bulletins have been issued or are in press on Earth Roads, The Relation and Value of Chemistry to Industry, The Comparative Value of Fuels, and on Highway Bridges and Culverts. Bulletins are now being prepared on Electricity in Country Homes, Specifications of Purchasing of Miscellaneous Supplies, and on Gravel Roads.

For copies of these bulletins and information regarding the work of the Texas Engineering Experiment Station, address D. W. Spence, Director, College Station, Texas.

EXTENSION SERVICE.

CLARENCE OUSLEY, Director.

Extension in agriculture and home economics is a work recently undertaken by the Agricultural and Mechanical College, and is now stimulated and partly sustained by an appropriation from the Federal government under the Smith-Lever Act. The general purpose is to carry information from the College, the Experiment Stations, and other sources of learning, research and demonstration, to persons who cannot attend the College. The work is undertaken in co-operation with the United States Department of Agriculture in a general way, and especially in direct touch with the farm demonstration work of that Department. The service includes information which will be helpful in the development of better farming and home-keeping, and in a broad way it is an undertaking for the general welfare of rural communities.

The Extension Service includes the following subdivisions:

1. LOCAL SHORT COURSES OVER THE STATE.

The College is prepared to conduct short courses in agriculture and home economics in a limited number of places over the State during the idle weeks following the laying-by of the crops. These courses continue for three days in each place. They are practically a movable college of agriculture and domestic science.

2. ORGANIZATION.

An important agency for successful agriculture is organization for diversification and marketing. The College has assisted in the organization of many such associations, and is prepared to furnish workers to aid any community of farmers who desire to associate themselves together for the study and marketing of their crops.

3. HOME ECONOMICS.

In the view of the College, the farm home is an essential part of the farm establishment, and the work that the farm wife does, as a partner in the business, is entitled to the same consideration that is given to the work done by the farmer himself. The College is conducting a definite undertaking for better living, and is promoting the organization of rural women for the study of their own problems.

4. CO-OPERATION WITH SECONDARY SCHOOLS.

The State law requires that agriculture be taught in public schools, and the College will co-operate with any school desiring aid in complying with this requirement of the law.

5. BOYS' AND GIRLS' CLUBS.

Boys' and Girls' Clubs are organized under the demonstration work in co-operation with the United States Department of Agriculture.

Those interested in the organization of Boys' Corn Clubs, Pig Clubs, Beef Clubs and other clubs for boys should address H. H. Williamson, Assistant in Charge, College Station, Texas; those interested in Girls' Canning Clubs, or in demonstration work for rural women, should address Miss Bernice Carter, State Agent in Home Demonstration, College Station, Texas.

6. INQUIRIES.

In addition to the foregoing divisions of the Extension Service, the College undertakes to answer personal inquiries concerning farm problems, superior methods, diseases of plants and animals, soil conditions, etc. All such inquiries should be addressed to Director of Extension Service, College Station, Texas.

7. CORRESPONDENCE COURSES.

The College is conducting courses of instruction by correspondence. At the time this catalogue goes to press several additional courses are in preparation. They will be announced in a later publication, which may be obtained by application to the Secretary of Correspondence Courses, College Station, Texas. Instruction is now given by regular College instructors in the following subjects:

1. Elementary Agriculture for Teachers.
2. Soils.
3. Fertilizers and Soil Fertility.
4. Grain Crops.
6. Hay and Forage Crops.
7. The Silo and Ensilage Crops.
8. Farm Dairying.
9. Farm Management.
11. Plant Propagation.
12. Vegetable Growing.
13. Small Fruits.
15. Citrus Fruits.
16. Beef Cattle.
17. Dairy Cattle.
18. Dual Purpose Cattle.
19. Sheep.
20. Hogs.
21. Horses and Mules.
22. Breeding Farm Animals.
23. Feeds and Feeding.
24. Creamery Management.
25. Elementary Entomology.
26. Economic Entomology.
27. Nut Culture.
28. Cotton Classing.

For further information, address Secretary Correspondence Courses, College Station, Texas.

FERTILIZER CONTROL SERVICE.

G. S. FRAPS, State Chemist.

The chemist to the Texas Experiment Station is designated by law as State Chemist, and has charge of the enforcement of the fertilizer law. Under his direction, fertilizers are inspected, sampled for analysis, the samples analyzed, and the results published as bulletins of the Experiment Station. It is also the duty of the State Chemist to investigate the composition, properties, and agricultural values of fertilizers, or fertilizer materials, and to conduct experiments relative to the value of fertilizers. Such investigations are being made, and the results published from time to time. The people of the State are furnished with information concerning fertilizers, by means of personal letters, bulletins, and otherwise.

Analyses are made of soils, irrigation and domestic waters, fertilizers, etc., when the analysis would be of public benefit, and when the samples are taken in accordance with the requirements necessary to secure a suitable sample. Persons who desire to secure an analysis should request further information and instructions for sampling, as samples not properly taken will not be accepted.

OFFICE OF STATE ENTOMOLOGIST.

WILMON NEWELL, State Entomologist; F. B. PADDOCK, Assistant State Entomologist.

By law the entomologist of the Texas Agricultural Experiment Station is ex-officio State Entomologist of Texas, and his headquarters are at College Station. The State Entomologist is charged with enforcing the laws of the State relative to diseases of honey bees and with furnishing citizens of the State information concerning injurious insects and their control.

GENERAL INFORMATION.

GRADES AND EXAMINATIONS.

Records of the work of each student are kept by the instructors in the several departments. The student's standing is indicated by marks based on 100 as a maximum. Examinations are held at the end of each term, and the student's term grade is determined by combining his daily average with his examination grade, giving to the former a weight 2 and to the latter a weight 1. The passing mark is 70 for the Junior and Senior classes, and 66 for all other clases; but if the daily grade be below 55, the term grade will be E; and if the examination grade be below 55, the term grade will not be higher than D.

ABSENCES.

When a student is absent from recitation a considerable number of times, his absences are taken into account in making up his term grade, unless the work missed is satisfactorily made up before the time set for the examination.

REPORTS.

Soon after the end of each term a report of the student's standing is mailed to his parent or guardian.

Reports are made in terms of letters, with the following meanings: 90 to 100, inclusive, A; 80 to 89, inclusive, B; passing mark to 79, inclusive, C; from 55 to the passing mark, D; below 55, E. In "practice," only two grades are given: P, passed; F, failed.

ADVANCEMENT.

No student will be advanced from a lower to a higher class who has deficiencies in more than twelve terms hours of work.

AMOUNT OF WORK.—BACK WORK.

The amount of work to be taken by regular students is prescribed in the several curricula; irregular students must take such studies as may be prescribed in each case; they must in each term take all back work scheduled for the term; they are required to take at least 18 term-hours of work, and are not allowed to take more than 4 term-hours in excess of the amount required of the class to which they belong.

ELECTIVE STUDIES.

Elective studies are to be chosen by the student under the advice and direction of a member of the Faculty designated for the purpose, and subject to schedule. The right is reserved to withdraw any course not required for graduation, if it should be chosen by fewer than five students.

DEFICIENCY EXAMINATIONS.

In each term there is held a series of examinations for the removal of deficiencies incurred in the preceding term. These examinations are open only to students who have a term grade D; and to those absent from the regular examination with excuse, provided they were eligible to take the regular examination. Special examinations will in no case be given without Faculty action.

The deficiency examinations for the courses given during the second term of the session of 1915-16 will be held according to the following

SCHEDULE.

September 21.		September 22.	
8:30 a. m.	1:00 p. m.	8:30 a. m.	1:00 p. m.
Ag. Eng. 4, 5	A. H. 3	Agron. 3, 16	Ag. Ed. 2
A. H. 4	Arch. 24, 35	A. H. 16	Ag. Eng. 6
Arch. 26	Biol. 1, 16	Chem. 1, 1a	Agron. 2a, 4
C. E. 10, 11	Chem. 2	C. E. 6a	A. H. 5
D. H. 3	Ch. E. 3	D. H. 1	Arch. 27, 36
E. E. 5, 6, 12, 13	C. E. 3, 7, 12	E. E. 42	Biol. 2, 3
Ent. 2	Engl. 2, 4, 9	Hort. 6	Chem. 4, 4a, 21
Hist. 1	Hist. 2	Math. 3, 5	C. E. 4, 9
Hort. 2, 4	Lang. 1, 3, 5	M. E. 205	Draw. 2
M. E. 1, 11	Math. 2, 13	Physics 6, 8	E. E. 2, 4
Physics 3, 4, 7	M. E. 2, 3, 5	T. E. 1, 6, 6a	Hort. 5, 12
T. E. 2a, 2b	Physics 1		Math. 11
Vet. Sc. 3, 4	T. E. 3, 5		M. E. 4, 5a, 6

EXEMPTION FROM MILITARY DUTY.

Mature men who enter with advanced standing in a considerable number of subjects may, for reasons satisfactory to the Faculty, be excused from military duty. This privilege is intended to apply particularly to men who have had considerable experience in teaching or in other professional work.

GRADUATION.

A diploma of the College, with the degree corresponding to the Course of study pursued, will be granted students who complete one of the regular Courses and pass satisfactory examinations on all of the branches therein.

No degree will be conferred without a residence of at least one year at the College. The diploma fee is $5.00.

HONORS.

At the end of each session students who have during the year received no term grade below B and have no deficiency in "Practice" are announced as "Distinguished."

EXPULSIONS.

At a joint session of the Board of Regents of the University of Texas and the Board of Directors of the Agricultural and Mechanical College, held at College Station, Texas, from June 30 to July 1, 1896, the following order was made:

"It is ordered, that hereafter, when any student shall be dismissed or expelled from either of the branches of the University of Texas on account of any immoral or other conduct which shall render him an unfit character to be matriculated in any of such branches, it shall thereupon be the duty of the branch so expelling or dismissing such student to immediately notify the other branches of their action, whereupon such other branches shall refuse to receive such student for matriculation, or even for examination, should he apply therefor, until the branch which has so expelled or dismissed him has rescinded or reconsidered its former action, and recommended such student for admission into such other branch at which he may apply."

LIBRARY.

The College Library was completely destroyed by fire May. 27, 1912. Through the generosity of friends of the College in Houston, it has been possible to make a beginning in its re-establishment. The Library consists of something over 2400 volumes, exclusive of approximately 1300 bound public documents, and over 15,000 pamphlets. It is chiefly a reference library, containing standard and technical works bearing particularly upon lines of study pursued in the College. The greatest care has been exercised in the selection of books, so as to include only the latest and most essential books in each line. With the exception of encyclopedias, books of general reference, current periodicals, and books temporarily reserved by certain schools for required reading in several courses, all books are loaned for home use for a perid of two weeks, with the privilege of renewal.

A large number of complimentary periodicals and exchanges are regularly received, and a file of the more important farm magazines is kept, as well as a file of all standard magazines received. The Library subscribes to sixty-four standard magazines, reviews and technical journals. All these are indexed in the Readers' Guide to Periodical Literature, which is likewise found in the Library. The leading newspapers of the State are received.

The Library is a designated depository, and receives copies of all publications of the United States Department of Agriculture and of other departments, and a card index to these is maintained.

The Library is open from 8:30 a. m. to 4:30 p. m. on Mondays, Wednesdays and Fridays; from 8:30 a. m. to 5:30 p. m. on Tuesdays, Thursdays and Saturdays, and from 2 to 5 p. m. on Sundays.

RELIGIOUS AND MORAL CULTURE.

There is religious service in the chapel every Sunday for the corps of students and the residents of the campus. A Sunday school for Bible study, attendance at which is voluntary, affords additional help in the way of ethical training. Every effort is made through lecture and personal example to develop and protect good morals in the young men attending the institution.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Young Men's Christian Association is the largest laboratory on the Campus. Its experiments and their results in moral and religious culture are exerting a powerful influence in the education of A. and M. students for an efficient life of service. It conducts religious meetings and lectures on Sunday. In September, 1914, about 500 students enrolled in systematic Bible study. Bible classes are conducted under student and professorial leadership. The Association employs a General Secretary, who devotes his entire time to the work.

A new building is now occupied by the Association. This $75,000 building provides social and game rooms and rooms suitable for the religious work of the Association.

ATHLETICS.

The usual forms of athletic sports are permitted. The Colleges is a member of the Texas Intercollegiate Athletic Association and of the Southwestern Intercollegiate Athletic Conference. The general rules of eligibility of both these organizations have been adopted by the Faculty. The Faculty Committee on Athletics is intrusted with the general oversight of athletics.

BAND.

An attractive feature is a regularly organized cadet band. Under the direction of a leader employed by the College, it furnishes music for occasions of social and military importance, gives open-air concerts in season, leads the regiment in marching to dinner, and plays at guard mounting and dress parade.

TRIPS OF INSPECTION.

At suitable times during the session trips of inspection, under the direction of some member of the teaching staff, are made to points of special interest. These trips have a high instructional value, and students of the upper classes are encouraged, though not required, to take them.

NON-RESIDENT LECTURERS.

At intervals throughout the session, men who have attained prominence in some branch of agriculture or engineering are invited to address the students with the view of enabling them to see more closely the relation between their college instruction and the work they will be called upon to do after they enter upon their professional careers.

BUILDINGS.

ACADEMIC BUILDING.

The Academic Building, completed in 1912, is located on the highest part of the Campus and occupies the site of the original Main Building, which was erected in 1876 and destroyed by fire May 27, 1912. It is 89 feet wide and 260 feet long and four stories high. It provides class and lecture rooms for the departments of Architecture, Drawing, Economics, English, History, and Mathematics, and quarters for the administrative offices, the library, and the armory; certain other departments have been assigned temporary quarters in this building. The building is constructed of brick and reinforced concrete, and is fireproof.

BERNARD SBISA HALL.

This is a one-story, fireproof building erected in 1912, to replace the Mess Hall destroyed by fire in October, 1911. The dining room has a seating capacity of over 1200, and the appointments of the building are modern in every respect.

Y. M. C. A. BUILDING.

The Y. M. C. A. building, completed in 1914, occupies one of the best locations on the campus. It is the first structure encountered on the avenue from the main entrance. The building proper is "T" shaped in plan, 89 feet across the façade and 111 feet from front to rear. It is two stories high with the front part surrounded by a wide piazza that forms a portion of the basement story. A small café and kitchen, barber shop, bowling alleys, locker rooms, shower and swimming pool will occupy the basement space. The lobby, auditorium, and secretary's office occupy the first floor, and offices, class rooms and secretary's living rooms the second floor. A third floor for residence purposes is yet to be added. The building is harmonious, architecturally, with the more recent College buildings, being a twentieth century adaptation of Renaissance *motifs*. Its auditorium is the most charming piece of work on the campus. The erection of the Y. M. C. A. Building was made possible by the gifts of many friends of the College, supplemented by a large contribution from Mr. John D. Rockefeller.

MECHANICAL ENGINEERING BUILDING.

This building is situated north of the Academic Building and partly houses the department of Mechanical Engineering. It consists of two distinct parts: First, the one containing the carpenter shop, and section rooms; second, that containing the blacksmith shop, machine shops, wood-turning room, and experimental laboratory. The first mentioned part is a two-story part, having the carpenter shop on the first floor and the other rooms on the second floor. The second part of the building is a one-story structure, containing the departmental equipment belonging to the work therein cared for; also an additional steam engine which furnishes the power for the shops.

AGRICULTURAL AND HORTICULTURAL BUILDING.

This building, erected in 1899, accommodates the agricultural and horticultural departments of the College by furnishing rooms for class instruction, laboratory investigations, museum purposes, butter and cheese making, pasteurizing milk, seed store room, photographic room, and the necessary offices for the accommodation of these departments. The building is 160 feet long and 77 feet wide, two stories high, and covered with slate. It contains twenty-seven rooms, fitted with apparatus and machinery for the instruction of students in the several branches of agriculture and horticulture.

CHEMICAL AND VETERINARY BUILDING.

This building, erected in 1902, is 138 feet long and 130 feet deep. It is built of brick and contains two stories and a basement. On the first floor the Veterinary department has its office, veterinary laboratory, students' laboratory, dissecting room, operating room, museum, lecture room and apparatus room. The Chemical department has on the same floor two store rooms, an assay room and a laboratory for State chemical work.

The second floor comprises the chemical and mineralogical museum, office and private laboratory of the professor of chemistry, two lecture rooms, balance room, two supply rooms and three laboratories for students.

VETERINARY HOSPITAL.

The Veterinary Hospital, erected in 1908, contains a clinic room, 36x36 feet, eight box stalls, four tie stalls, two rooms for dogs, a large colic stall, feed room, medicine room, janitor's room, etc. The building is floored with concrete, with traps from each stall to the sewer, thus permitting the proper isolation of contagious diseases and the thorough disinfection of each stall. An automatic flush tank serves to keep the building in a sanitary condition.

TEXTILE BUILDING.

This building, erected in 1904, is constructed of smooth red brick, according to the plans of an expert mill engineer, and is an excellent example of modern cotton mill construction. The construction is of the slow-burning type generally accepted by American engineers as the most satisfactory for cotton manufacturing.

The building is two stories high, 50 feet wide and 180 feet long. The first floor is occupied by the carding and spinning and warp-preparation machinery, and the Professor's office. The second floor is occupied by the weaving and cloth-finishing machinery and by the designing and class rooms, and the offices of the instructors in weaving.

The building is heated throughout by a Webster vacuum system of steam heat, and a complete sprinkling system for fire protection has been installed. The plumbing in the building is perfectly sanitary and typical of the best cotton mill practice.

CIVIL ENGINEERING BUILDING.

This building, erected in 1909, and used to house the departments of Civil Engineering and Physics, contains eight lecture rooms, five laboratories, five drawing rooms, and several offices and store rooms.

The building is 125 feet wide and 73 feet deep; it has a basement and three stories, is heated by steam and is fireproof.

ELECTRICAL ENGINEERING BUILDING.

This building, erected in 1912, and used to house the departments of Electrical Engineering and Mechanical Engineering, contains thirteen lecture rooms, four laboratories, two drawing rooms, and several offices and store rooms.

It has a basement and three stories; is 125 feet wide by 103 feet deep; is heated by hot water, and is fireproof.

EXPERIMENT STATION BUILDING.

This building, erected in 1909, contains offices, laboratories and store rooms for the officers of the Experiment Station.

The building is 115 feet wide and 61 feet deep; it has a basement and two stories, is heated by steam, and is fireproof.

GATHRIGHT HALL.

This building was erected in 1876, and is named in honor of Thomas L. Gathright, the first President of the College. It is being used temporarily for offices for the Extension Service, and for other purposes.

PFEUFFER HALL.

This is a dormitory, erected in 1887, and contains twenty-five rooms. It is named in honor of George Pfeuffer, a former President of the Board of Directors.

AUSTIN HALL.

This is a dormitory, erected in 1888, and contains twenty-five rooms. It is named in honor of Stephen F. Austin.

ROSS HALL.

This is a dormitory, erected in 1892, three stories high, with forty-one rooms. It is named in honor of former President L. S. Ross.

FOSTER HALL.

This building was erected in 1899, and is named in honor of former President L. L. Foster. It is a dormitory and consists of three separate parts; the central part is four stories high and contains nineteen rooms; the two ends are three stories high and contain eighteen rooms each.

GOODWIN HALL.

This dormitory was erected in 1908 and named in honor of Hon. G. I. Goodwin. It contains eighty-two rooms and is equipped with a steam heating system and modern toilet facilities.

MILNER HALL.

This building was erected in 1911 and named in honor of former President R. T. Milner. It is a dormitory containing one hundred and two rooms. The building is four stories high; there are no connecting stairways between the several floors, but each story has separate entrances so as to divide the building into four distinct parts, without interfering with the ventilation in any part of the building. Each story has four shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick and is practically fireproof.

LEGETT HALL.

This building was erected in 1911 and is named in honor of K. K. Legett, a former President of the Board of Directors. It is a dormitory and in every respect a duplicate of Milner Hall.

HARVEY MITCHELL HALL.

This building was erected in 1912, and is named in honor of a former citizen of Bryan, who was largely instrumental in having the College located in Brazos county.

It is a dormitory, having a basement and three stories, and contains eighty-six rooms, each one having an outside exposure. Each story has shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick, and is practically fireproof.

ASSEMBLY HALL.

This is a two-story brick building, erected in 1889, having a main floor and gallery.

NATATORIUM.

This building was erected in 1908 and is thoroughly equipped for shower baths. It contains forty-six dressing rooms, thirty-two stalls supplied with hot and cold water for shower baths, toilet facilities, and rooms for the attendants.

SEWERAGE SYSTEM.

The College is provided with a system of sewers, to which are connected the various dormitories, the academic building, the agricultural and horticultural hall, the steam plant, the infirmary, the mess hall, and the residences. The outfall of the system is three fourths of a mile from the nearest College building and nine-tenths of a mile from the nearest recitation hall or dormitory.

FARM BUILDINGS.

The farm buildings of the College and Experiment Station are situated to the rear of the academic building, and consist of a farm implement building, a mule barn, a general farm barn, a large dairy barn with two silos, each of 200 tons capacity.

GROUNDS AND GARDEN.

The garden, orchard, barnyards and campus are included in the enclosure to the east of the railroad station. The campus consists of some twenty-five acres of lawn, shrubbery and flowers.

The orchard, vineyard, nursery and garden are located north and east of the academic building.

FARM.

The farm proper comprises about three hundred and fifty acres. The pastures contain in the neighborhood of one thousand acres, and furnish grazing for the College herds.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

Herrington, John Anderson............................Bryan.
B. S., A. and M. College of Mississippi, 1906.
Candidate for the Degree of Mechanical Engineer.
Potts, Arthur Tillman................................College Station.
B. S., A. and M. College of Texas, 1907.
Candidate for the Degree of Master of Science.
Reed, Edward Looman..................................College Station.
B. A., Oklahoma Baptist College, 1912.
Candidate for the Degree of Master of Science.
Stelzig, Elo Henry...................................Fayetteville.
B. S., A. and M. College of Texas, 1914.
Candidate for the Degree of Master of Science.
Wood, Casper Alfred..................................College Station.
B. S., Kansas State Agricultural College, 1911.
Candidate for the Degree of Master of Science.

UNDERGRADUATE STUDENTS.

Abbreviations.

Ag—Agriculture.
Ar—Architecture.
AE—Architectural Engineering.
Ch—Chemical Engineering
C—Civil Engineering.
E—Electrical Engineering.
M—Mechanical Engineering.
T—Textile Engineering.
a—Two-Year Course in Agriculture.
e—Two-Year Course for Electricians.
m—Two-Year Course for Power Plant Operators.
t—Two-Year Course in Textile Engineering.

'15—Senior.
'16—Junior.
'17—Sophomore.
'18—Freshman.
Sp—Special Student.
1—First Year of the Two-Year Courses.
2—Second Year of the Two-Year Courses.

Abernathy, Milton Aubrey..............'16 C.......Paducah.
Abney, Will Hamilton....................Sp Ag....Lampasas.
Adams, Clyde Akerly...................'18 Ar......Oakland, Cal.
Adriance, Guy Webb....................'15 Ag......Bryan.
Alderson, Thomas Crittenton...........'18 Ag......Katy.
Graduate Katy High School.
Aldridge, Edwin Ernest................'16 M......Eagle Pass.
Graduate Eagle Pass High School.
Alex, Alfred Herman...................'18 Ag......Yorktown.
Graduate Yorktown High School.
Alexander, Ed. Gaskell..................Sp Ag....Austin.
Alexander, Earl Lyles.................. 1 t.......Hillsboro.
Alexander, John Richmond..............'15 M......Navasota.
Graduate Navasota High School.
Allen, Edgar Henry....................'18 Ag......Harleton.
Graduate Marshall High School.
Allen, Edward Rudge...................'17 Ag......Galveston.
Allen, John Spillman..................'18 Ag......Palestine.
Allen, Oscar Lamar.................... 2 a.......Yoakum.
Allen, Roderick Random................'15 Ag......Palestine.
Allert, Carlos Carter.................'17 E.......Cuero.
Graduate John C. French High School.

Allison, Elmer Curtis..................'18 E.......Ballinger.
Graduate Ballinger High School.
Amsler, Hervey Meyer.................'18 C.......Hempstead.
Anderson, Farris Shelton................'18 Ag....Mineral Wells.
Graduate Mineral Wells High School.
Andrews, Dallas Robert................'17 Ag......Bryan.
Andrews, Earlie Clyde.................. 1 a.......Bryan.
Arledge, Henry Bond.................. 1 a.......Crockett.
Graduate Crockett High School.
Armstrong, Henry Ainsworth............'18 M......Gainesville.
Graduate Gainesville High School.
Armstrong, Ural Stokes.................'17 E.......Plainview
Graduate Plainview High School.
Arnold, Leon Laird..................... 1 a.......Vernon.
Artusy, Gerald Max....................'17 Ag......Galveston.
Ater, Guy.............................'17 E.......Bertram.
Graduate Bertram High School.
August, Lester Holmes.................'16 Ch......Luling.
Graduate Luling High School.
Austin, James Lamar................... 1 e........Britton.
Avent, Benjamin Rhette................'17 C.......Lott.
Graduate Rosebud High School.

Baccus, Embury Depee.................'16 E.......Seymour.
Graduate Seymour High School.
Baker, Dudley Evans...................'18 C.......Crowley.
Graduate Crowley High School.
Baker, Roy Lee.......................'18 M......Anson.
Ballard, Thomas Leen......................Sp Ag....Haskell.
Barbee, William Terry..................'17 Ag......Hico.
Barnes, James Renfro..................'17 Ag......Chillicothe.
Graduate Chillicothe High School.
Barraco, Victor Anthony................'15 Ag......Houston.
Barton, John Alexander.................'17 Ag......Port Lavaca.
Graduate Port Lavaca High School.
Bates, Clyde Noble....................'17 C.......El Campo.
Graduate El Campo High School.
Bates, Warren Wilder..................'18 Ch......Beeville.
Graduate Beeville High School.
Bean, Kenneth Ray....................'18 Ag......Wichita Falls.
Beasley, Jeff Gibson, Jr.................'17 Ag......Cleburne.
Beaty, Charles Leffler..................'17 T.......Beaumont.
Graduate San Antonio High School.
Becker, Philip George..................'18 Ag......Fort Worth.
Beckmann, Albert Erhard...............'15 Ag......San Antonio.
Bell, Benjamin Franklin...................Sp Ag....Tyler.
Bell, Jeff Edgar.......................'15 C.......Luling.
Graduate Luling High School.
Bell, Tyree Lewis, Jr...................'15 C.......Dallas.
Bell, Willis Fenton.................... 2 a.......Luling.
Bennett, Adam Jackson.................'17 E.......Nottawa.
Bennett, Irby Allen....................'18 Ag......Dallas.
Graduate Maple Lawn High School.
Bennett, Joel Blackwell.................'17 Ag......Hochheim.
Benson, Hardy Moulton................'18 M......Clarendon.
Beringer, Milton Streuer................'16 Ch......Gonzales.
Graduate Gonzales High School.
Berry, Jack...........................'17 Ag......Pearsall.
Graduate Coronal Institute.
Berry, Joe Lees.......................'18 Ag......Hubbard.
Graduate Hubbard High School.
Berry, Walter Earl.....................'18 M......Hubbard.
Bierschwale, Edward Louis..............'18 Ag......Morris Ranch.
Billips, Val T.........................'17 C.......Winters.
Bittle, Guy Manville....................'18 Ag......Bryan.
Graduate Allen Academy.

Bivins, June............................'17 Ag......Longview.
Blankfield, Meyer.......................'16 E.......Galveston.
Blanton, John Franklin..................'17 E.......Hewitt.
Graduate Hewitt High School.
Blasingame, Albert Jerome............... 2 a.......Kemp.
Bledsoe, William Scott..................'17 E.......Cleburne.
Boatright, Charles Baxter...............'18 Ag......Berryville, Ark.
Boettcher, Carl.........................'18 Ag......Houston.
Bohning, Garrett William................'18 Ag......Fort Worth.
Bone, Lewis Bernard.....................'18 C.......Dallas.
Boriskie, Edward Henry.................. 1 a.......Bryan.
Born, Jacob.............................'18 AE......Corpus Christi.
Graduate Corpus Christi High School.
Bosque, Robert Edward...................'16 Ag......Corsicana.
Graduate State Orphan High School.
Boyd, Charles Thomas....................'18 Ag......Port Lavaca.
Graduate Port Lavaca High School.
Boyett, Guy Frank.......................'18 Ag......College Station.
Bozeman, Clifton Donaldson..............'18 E.......Hamlin.
Graduate Hamlin High School.
Braden, Clarence Camille................'18 Ch......Jefferson.
Graduate Jefferson High School.
Bradford, Thomas Leonard.................Sp Ag....Dallas.
Brailsford, Thomas Reed.................'17 Ag......Latexo.
Graduate Crockett High School.
Bramlette, Frederick Levenworth.........'16 C.......Longview.
Braumiller, Nickolaus Mathias...........'16 M.......Texarkana.
Graduate Texarkana High School.
Braumiller, Walter Edwin................'16 Ag......Texarkana.
Graduate Texarkana High School.
Braunig, Carl Francis...................'17 Ag......Hallettsville.
Breazeale, Morris Hamon.................'18 C.......Burnet.
Graduate Burnet High School.
Brecher, Edwin Robert...................'17 Ag......San Antonio.
Graduate Breckenridge High School.
Brewer, Roy Allan.......................'18 Ag......Cleburne.
Brewster, James Edward, Jr.............. 1 a.......Temple.
Graduate Temple High School.
Bridgewater, Malcolm Macfarlan..........'17 E.......Schulenburg.
Brigance, George........................'16 C.......Pierce City, Mo.
Briggs, Robert Webb.....................'17 C.......Bay St. Louis, Miss.
Bringhurst, Edmond Lesley............... 1 a.......Houston.
Brodbent, Irey Smith.................... 1 a.......San Antonio.
Brooks, Edward Cottrell.................'18 Ag......Bay City.
Brooks, Hugh............................'18 Ag......Pasadena, Cal.
Brotherton, Robert Al...................'18 Ag......Dallas.
Broun, James Walter Ford................'18 Ag......Greenwood.
Broun, Thomas Rogers....................'15 Ag......Greenwood.
Browder, Charles Marion.................'17 C.......Groesbeck.
Graduate Groesbeck High School.
Browder, John Hosea, Jr.................'15 T.......Groesbeck.
Brown, Charles Wiley....................'18 Ag......Waco.
Graduate Waco High School.
Brown, Edward Lee.......................'17 E.......Dallas.
Graduate Dallas High School.
Brown, Harry Pearce..................... 1 a.......Beeville.
Brown, James David......................'16 Ar......Rockport.
Graduate Rockport High School.
Brown, Joe F............................'18 Ag......Rock Springs.
Brown, Leslie Walter....................'15 Ag......Mathis.
Brown, Mitchell Harvey..................'17 E.......Rockwall.
Brown, Robert Lee........................Sp Ag....Amarillo.
Brown, Rodgers Porter...................'17 M.......Dallas.
Brown, Rob Roy..........................'18 Ch......Liberty Hill.
Graduate Liberty Hill High School.
Browne, James Duke......................'18 E.......Luling.

Bruce, Andrew Davis	'16	Ag	San Antonio.
Brunnemann, Frank Cadwell	'18	Ag	Flatonia.
Graduate Flatonia High School.			
Bryan, Lester Leon	'17	C	Glen Rose.
Graduate Glen Rose High School.			
Bryson, Frederick Robertson	Sp	Ag	Little Rock, Ark.
Buchanan, Andrew Frederick, Jr	'17	Ag	Bishop.
Buchanan, Durant Samuel	'17	Ag	Bryan.
Buchner, Louis McIntosh	'17	Ag	Austin.
Bugbee, John Sherman	'15	Ag	Clarendon.
Bull, Alfred Castleman	'16	Ag	Austin.
Burchard, Sam Houston	'15	C	Gonzales.
Burges, Austin Earl	'15	Ag	Weatherford.
Burkett, Fred	'16	C	Fort Worth.
Burkett, Harry J	'18	Ag	Galveston.
Burkett, James Marion	'17	Ar	Graham.
Graduate Graham High School.			
Burns, Douglas	'16	Ag	Cuero.
Burns, Darnce Bernard	'18	C	Bowie.
Burton, Joseph	'18	Ag	Clarendon.
Butler, Marvin Newton	1	a	Kenedy.
Byars, Russell Henry	'18	Ag	Houston.
Byrom, Travis Carroll	1	a	Sue.
Cain, Earl Smith	'17	E	Tyler.
Camp, Robert Shaw	'18	Ag	Navasota.
Camp, Thomas Ringgold	'16	AE	San Antonio.
Campbell, Archibald Raymond	'15	Ag	Plano.
Campbell, William Lindsey	'18	E	Amarillo.
Graduate Amarillo High School.			
Carleton, Howard Cantrell	'16	Ag	Dallas.
Carll, James Cooper	1	a	Bryan.
Carmichael, Ray	'18	C	Saint Jo.
Graduate Saint Jo High School.			
Carson, Alfred Doughton	'17	Ag	Bryan.
Carson, William Willis	'15	E	Sherwood.
Cartwright, Emmit. Bea	'17	Ag	Sherman.
Casey, Alfred Cecil	'16	Ag	Rogers.
Cash, Reuben Mott	'18	M	Galveston.
Graduate Peacock Military College.			
Cather, Harold Malcolm	'17	M	Waco.
Graduate San Antonio High School.			
Cawthon, Frank Walter	'15	C	Denison.
Graduate Denison High School.			
Chambers, David Cheatham	'17	M	New Boston.
Graduate New Boston High School.			
Chandler, Sidney Pleasant	Sp	Ch	El Campo.
Graduate El Campo High School.			
Chappelle, Hugh Lyman	'18	Ag	College Station.
Chappelle, Roy L	'17	Ag	College Station.
Chatham, Robert Carlton, Jr	'18	Ag	Dallas.
Cherry, Thomas Graves	'15	Ag	Giddings.
Childers, Reddin Raymond	1	a	Jasper.
Chilton, Louis Warren	'18	Ch	Goliad.
Clark, Samuel Finis	'15	Ag	Hico.
Graduate Hico High School.			
Clarke, Hugh St. Clair	'16	M	Comanche.
Graduate Comanche High School.			
Clarkson, Percy William	'15	E	San Antonio.
Claytor, Edward McRae	'15	E	Campbell.
Clements, Luther Barton	1	a	Crowley.
Cochran, Carl Berry	'18	Ag	Sanderson.
Graduate Sanderson High School.			
Cochran, Thomas Beauford	'17	Ag	Austin.
Cockrell, James Bass	'17	Ag	Terrell.

Coker, Simeon Horace.................’17 Ag......Dallas.
Graduate Dallas High School.
Cole, Ransom James...................’16 Ag......Bryan.
Coleman, Frank Ralph.................’16 E.......Hallettsville.
Graduate Hallettsville High School.
Coleman, William Cowles..............’15 Ag......Athens.
Coleman, Wiley Lee...................’17 E.......Fort Worth.
Collier, Homer Eugene................ 1 a.......Waco.
Collins, Jack Clarence...............’15 Ag......Channing.
Graduate Channing Public School.
Collins, Willie Atmar................’16 Ag......Groveton.
Cone, James Cecil.................... 1 a.......Llano.
Conner, Arch Rice.................... 2 a.......Archer City.
Conner, James Augustus...............’16 Ag......Lexington.
Graduate Lexington High School.
Conway, Myron Joseph.................’17 Ag......Mission.
Cook, William Berry..................’17 Ag......Bryan.
Cook, Wilbur Owen.................... 1 e........Sealy.
Cooper, F. A.........................’18 E.......Jefferson.
Copeland, Alvin Barnabas.............’15 Ag......Huckabay.
Copeland, Clinton Marion.............’18 C.......Graham.
Graduate Graham High School.
Copeland, James Sharp................ 1 e........Rogers.
Cornett, Guy Joris...................’16 C.......Grandview.
Corry, Hal Francis...................’17 E.......Rockwall.
Cothran, Andrew Barto................ 1 a.......Wellborn.
Cox, Noland Charles.................. 1 e........Groveton.
Crabtree, Ralph......................’18 E.......Godley.
Craig, Samuel Reid...................’17 C.......El Campo.
Graduate El Campo High School.
Craig, William Walter................’18 M......Handley.
Crain, Oscar Taylor.................. 1 a.......Hagerman.
Crawford, Robert Daniel..............’18 Ag......Grand Prairie.
Graduate Grand Prairie High School.
Crawford, Vernon William.............’16 Ag......Menard.
Crisp, Marshall Claiborne............’15 Ar......Cuero.
Graduate John C. French High School.
Crocker, Norman G....................’18 Ag......Center.
Crocker, William Jennings............’16 E.......Dallas.
Crockett, Floyd Marion...............’17 C.......Prosper.
Cronau, Robert Theodore.............. 1 a.......Kewanee, Ill.
Crow, Floyd Arnold...................’17 Ag......Waco.
Crow, Glenn Columbus.................’17 C.......Willis.
Crown, Phil Theodore.................’15 Ar......Waco.
Cunningham, Marvin Houston.......... 1 a.......El Paso.
Curnutte, James Vincill..............’16 C.......Snyder.
Graduate Snyder High School.
Curtis, Wyman Broun..................’17 Ag......Lake Village, Ark.

Darby, James Andrew..................’17 E.......San Antonio.
Daugherty, Martin Marion.............’16 Ag......Alpine.
Davis, Charles Jester................’15 Ag......Corsicana.
Graduate Corsicana High School.
Davis, Dean..........................’15 E.......Dawson.
Davis, John Lyman....................’18 C.......McKinney.
Graduate McKinney High School.
Davis, Stanley Forrest...............’15 Ag......San Antonio.
Graduate San Antonio High School.
Davis, Thomas Jefferson..............’18 Ag......Leonard.
Graduate Leonard Public School.
Davis, William Kinnard...............’16 E.......Hico.
Graduate Hico High School.
Deats, Lawrence Elmer................ 1 m.......Dickinson.
DeLong, Raleigh......................’15 M......Mexia.
Denning, Charles Oscar...............’17 M......Mexia.
Graduate Mexia High School.

Dennis, Leon Chapman................'16 Ag......Prince Bay, N.Y.
Dennis, Lewis Franklin................'18 Ag......Rotan.
Graduate Rotan High School.
Denton, Velpean Curlee................'15 C.......Whitewright.
Deputy, Ona Delos....................'17 Ag......Dallas.
Graduate Dallas High School.
Dick, Walter Gresham.................. 1 a.......Columbus.
Graduate Columbus High School.
Dickens, Sam, Jr......................'18 M......Lampasas.
Graduate Lampasas High School.
Dickie, Alexander.....................'16 E.......Breckenridge.
Graduate Breckenridge High School.
Dickie, Byron Homer..................'15 E.......Breckenridge.
Graduate Breckenridge High School.
Dillon, Roy Eustuce................... 2 a.......Judkins.
Dixon, Walter Ivy.....................'18 Ag......Proctor.
Dodd, William Cross......................Sp Ag....Langtry.
Graduate Houston High School.
Dodson, Alfred Ewing..................'15 Ag......Petersburg.
Dodson, James Samuel, Jr.............. 1 a.......Fort Worth.
Dodson, Quaite........................'18 Ag......Hubbard.
Donaldson, Robert Cecil............... 1 a.......Cleburne.
Doney, Louden Charles, Jr.............'18 Ag......Corpus Christi.
Downing, James Solon.................. 1 a.......Wichita Falls.
Graduate Wichita Falls High School.
Dudley, Edison Becton.................'18 Ag......Plano.
Graduate Plano High School.
Dudley, Howard Waller....................Sp Ag....Hillsboro.
Graduate Hillsboro High School.
Duke, John William....................'18 M......Pearsall.
Graduate Pearsall High School.
Duncan, Mofford Slawson...............'17 Ag......Killeen.
Graduate Killeen High School.
Dunkle, Paul Burtch...................'17 Ag......Lelia Lake.
Dunlay, Edward Erik...................'18 Ch......Austin.
Dunning, George Rutledge..............'15 Ch......Gonzales.
Dunsmoor, Herbert Everton............. 1 a.......El Campo.
Durst, Paul Turner....................'18 C.......Tyler.
Dutton, Carl Arden....................'17 M......Waco.
Graduate Waco High School.
Dyer, Scott Bruce.....................'17 E.......Tulia.

Earnest, Lawrence Howell..............'17 C.......Laredo.
Graduate San Antonio High School.
Easley, Claudius Miller...............'16 AE......Waco.
Graduate Waco High School.
Eastland, Alfred Milton............... 1 a.......Oklahoma City, Okla.
Edwards, Arthur Irvin................. 1 a.......Millican.
Edwards, Herbert Kyle.................'18 Ag......Crowell.
Ehlers, Alfred........................ 1 t........LaGrange.
Graduate LaGrange High School.
Ehlert, John Charles Frederick..........'16 Ag......Brenham.
Eiland, Ernest Ralph..................'15 Ag......Rockdale.
Elam, William Nile....................'17 Ag......Ohio.
Eldridge, Herbert.....................'17 C.......Pineland.
Graduate Buna High School.
Elliott, George Monroe................ 2 a.......Paris.
Elliott, Robert Drane.................'17 E.......Corsicana.
Graduate Corsicana High School.
Ellis, Ernest Lewis...................'18 C.......Mesquite.
Graduate Mesquite High School.
Ellis, Howard Ferguson................'15 Ag......Abbott.
Erskine, Clayton Haralson.............'18 C.......San Antonio.
Ervin, John Guy.......................'18 Ag......Green Valley, Va.
Eschenburg, Arthur Carl...............'16 Ag......Floresville.
Etchison, Allen Rene.................. 1 a.......Waco.

Evans, Coxey.........................'18 C.......Crowley.
Evans, George........................ 1 a.......Nevada.
Graduate Nevada High School.
Evans, Oney..........................'18 Ag.....Uvalde.
Everett, George Dudley...............'15 Ag.....Dallas.
Graduate Dallas High School.

Faber, Bennie Herman.................'15 C.......Eagle Lake.
Graduate Eagle Lake High School.
Fahey, Martin Joseph.................'18 Ag.....Navasota.
Graduate Navasota High School.
Faires, Lee Killough................. 1 a.......Flatonia.
Farrell, Edd Sam......................Sp Ag....Monticello, Ark.
Farthing, Welbourne Owen.............'17 Ag.....Valley View.
Felker, Abe Womack................... 1 t.......Hockley.
Fields, Nelton Boney..................Sp Ag....Spur.
Findlater, John Corscaden............'17 E.......San Angelo.
Flach, Ernest Kapp...................'17 Ag.....Comfort.
Fleming, Charles Herman..............'17 Ag.....Merit.
Graduate Fort Worth High School.
Florian, Fredrick de Bussieres.......'18 Ag.....San Antonio.
Ford, Marvin Harrison................'18 Ag.....Navasota.
Graduate Navasota High School.
Forsyth, George Alexander............'17 M......McKinney.
Graduate McKinney High School.
Forsyth, William Russell.............'16 M......McKinney.
Graduate McKinney High School.
Foster, Clayton Jones................'16 Ag.....Denton.
Graduate North Texas State Normal.
Foster, Hubert Gilson................ 1 a.......Calvert.
Foster, Julian Lewis.................'16 E.......Fort Worth.
Foster, Wilbur Carradine.............'17 Ag.....Opelousas, La.
Fowler, James Byron..................'18 E.......Goliad.
Francis, James Wallace, Jr...........'18 Ag.....Calvert.
Francis, William Bebb................'15 Ag.....College Station.
Francisco, Edgar Oliver..............'15 C.......Coalgate, Okla.
Francks, Church Barry................'18 Ag.....Marlin.
Frazer, Earl Marlin..................'18 M......Boston, Mass.
Freeman, Clifford....................'18 Ag.....Medina.
Graduate Medina High School.
Friend, Horace Burns................. 1 e.......Ozona.
Fry, Homer Lee.......................'17 Ag.....Denton.
Graduate Denton High School.
Fuchs, John William..................'17 E.......Round Rock.
Fuess, Carl Andrew...................'16 AE.....Cuero.
Furman, Edward Edwards...............'18 Ag.....Corpus Christi.

Galliford, Walter Thomas.............'17 M......Galveston.
Graduate Palacios High School.
Gammill, Harold Harper...............'15 Ag.....Bryan.
Gardner, Jesse Cornelius.............'17 Ag.....Terrell.
Gardner, Neil Ethridge, Jr...........'17 Ar.....Waco.
Graduate Granger High School.
Garitty, John Patterson..............'17 T.......Corsicana.
Garner, Eddie Clinton................'18 E.......Dawson.
Graduate Dawson High School.
Garrett, Melrose Truett..............'16 Ag.....Merrimac.
Graduate Crawford High School.
Garrett, William Argyle, Jr...........Sp M....Houston.
Graduate Houston High School.
Garza, James Leonard................. 1 t.......San Antonio.
Graduate San Antonio High School.
George, Cicero Jackson............... 2 a.......Waco.
Graduate Douglas Select School.
Gibbs, John Lawson...................'17 M......Burnet.
Graduate Burnet High School.

Gibson, Manly Broadus *Graduate Angleton High School.*	'17	Ag	Angleton.
Giesecke, Edward	'18	Ag	Ballinger.
Gilfillan, Max Dole	'17	Ag	St. Johnsbury, Vt.
Gill, Hugh	Sp	Ag	Houston.
Gillespie, Jack Cole	Sp	Ag	Dallas.
Gillespie, William Spence	'15	C	Houston.
Gilliam, Frederick Lewis *Graduate Tyler High School.*	'18	Ch	Tyler.
Girardeau, Edward Reed, Jr. *Graduate Ball High School.*	'15	Ag	Galveston.
Givens, George Thomas	'18	C	Dallas.
Glover, Rufus Elliott	2	a	Falfurrias.
Gooch, Roy Branch *Graduate Temple High School.*	'17	M	Temple.
Gorman, Edwin Mobley	'18	Ag	Oakwood.
Gould, Charles Holt	'16	Ag	Worcester, Mass.
Grace, Joe William *Graduate Spur High School.*	'18	C	Spur.
Graham, Cyrus Earle	'16	Ag	Bryan.
Gray, James William *Graduate Caldwell High School.*	'17	E	Caldwell.
Gray, Oscar Somers *Graduate Terrell High School.*	'16	Ag	Terrell.
Greathouse, Thaddeus Allen	'17	Ag	Austin.
Green, Frank Lester *Graduate Bowie High School.*	'18	C	Bowie.
Green, Perry Roberts *Graduate Waco High School.*	'17	C	Waco.
Greene, Ossie Wendelken	'15	Ag	Comanche.
Griesenbeck, Carlos Philip Timothy	'18	Ag	San Antonio.
Griffin, Arthur Thomas	1	a	Ancon, C. Z. Panama.
Griffin, Joseph Hadyn	'18	Ag	Myra.
Grissom, Roland Lionel	'17	E	Houston.
Groseclose, William Buell *Graduate Strawn High School.*	'18	E	Dallas.
Gunn, Clifton Henry	'16	Ag	Waelder.
Haas, Julius Karl	'18	Ag	Brighton.
Haden, Julian Frank *Graduate Timpson High School.*	'16	Ar	Timpson.
Hafner, Vernon Etter *Graduate Greenville High School.*	'17	Ag	Greenville.
Hagaman, Leslie Hilsman	'16	C	Ranger.
Haines, Lee Curtis	'18	Ag	Gatesville.
Haines, Paul Graves	'17	Ag	Gatesville.
Hajek, William Stephan *Graduate Allen Academy.*	2	t	Bryan.
Halbedl, Clifton Charles *Graduate San Antonio High School.*	'17	Ag	San Antonio.
Hall, Robert Alison	'16	Ag	Tarkington Prairie.
Haller, Clarence Francis	'15	Ag	Victoria.
Halsey, Frank Wilbur	'17	Ag	St. Johnsbury, Vt.
Hamilton, Mark Armstrong *Graduate Tyler High School.*	'18	E	Tyler.
Hamilton, William McMurray *Graduate West Texas Military Academy.*	1	a	San Antonio.
Hamilton, Zebulan Thomas *Graduate Grapevine High School.*	'18	Ar	Grapevine.
Hammett, Mahlon Winn *Graduate Corsicana High School.*	'18	M	Corsicana.
Hamner, Edward Joe, Jr.	'17	Ag	Sweetwater.
Hamon, Edwin Raymond	1	e	Weatherford.
Hamon, Frank Lewis	1	e	Weatherford.
Hancock, John	'18	Ag	Dallas.

Hanson, Gordon Bell....................'17 E.......Tyler.
Graduate Tyler High School.
Hanson, Gustaf William.....................Sp ME...Bryan.
Hanson, Wrathall King..................'16 Ag.....San Antonio.
Hanway, John Thomas, Jr................'17 T.......Bryan.
Graduate Allen Academy.
Hardigg, Jep Casey.....................'17 M......Evansville, Ind.
Hargrave, Murrie Guy...................'18 C.......Fort Worth.
Harkin, John Dennis.....................1 a........Fort Worth.
Harrington, Robert Marion..............'18 T.......Plano.
Graduate Plano High School.
Harris, Henry Clay.....................'17 Ag.....Greenville.
Graduate Greenville High School.
Harris, Thomas Wayne...................'18 Ag.....San Angelo.
Graduate San Angelo High School.
Harrison, Julian P.....................'17 C.......Marshall.
Graduate Marshall High School.
Harriss, David Lonnie..................'17 Ar......Rockdale.
Graduate Miles High School.
Harvin, Charles Miller.................'18 Ag.....Sutherland Springs.
Hatley, Walter George..................'18 M......Galveston.
Hausser, Charles.......................'16 Ag.....Eagle Pass.
Hawes, Roscoe..........................'16 C.......San Antonio.
Graduate Uvalde High School.
Hawkins, Alden Riley...................'16 AE.....Dallas.
Haynes, Sylvan Blum....................'16 Ar......Port Arthur.
Graduate Port Arthur High School.
Hays, Albert Boyd.......................1 a........San Antonio.
Heder, Louis Argyle....................'18 Ag.....San Antonio.
Hefner, Charles Balser.................'16 E.......Cuero.
Graduate John C. French High School.
Heldenfels, Grover Cleveland...........'16 Ag.....Beeville.
Helm, Dury Lane........................'16 Ag.....Clifton.
Graduate Clifton High School.
Hemphill, James Andrew.................'17 M......Richmond, Ark.
Henley, Ernest Nelson..................'16 C.......Brackettville.
Henry, Grady Wallace....................1 e........Aransas Pass.
Henry, Julian Lemonde..................'16 Ag.....Lancaster.
Hensarling, Abram......................'18 Ag.....Wellborn.
Hervey, Stewart Darden.................'17 Ag.....Galveston.
Hester, Jesse Walton...................'17 C.......Colorado.
Hicks, Jesse William...................'17 Ag.....Canyon.
Graduate Canyon High School.
Hill, Martin Elmo......................'16 Ag.....Eastland.
Hill, Robert Aaron......................2 a........Austin.
Hill, Ralph Edwin......................'17 E.......El Campo.
Graduate El Campo High School.
Hill, W. B.............................'18 Ag.....Glen Rose.
Graduate Glen Rose High School.
Hinds, Gordon Ferguson.................'17 Ch......Bullard.
Graduate Bullard High School.
Hintz, Richard Wilhelm.................'18 Ag.....Sealy.
Graduate Sealy High School.
Hobbs, Leonard Sinclair................'16 M......Brownsville.
Graduate Brownsville High School.
Hockaday, Frederick James..............'18 Ag.....Madill, Okla.
Hockaday, Irving Thomas................'16 E.......Madill, Okla.
Hodgson, Albert Lee....................'17 Ag.....Mazomanie, Wis.
Hogue, Ernest Newton...................'15 E.......Paris.
Graduate Paris High School.
Hohn, Alexander........................'18 Ag.....Yorktown.
Graduate Yorktown High School.
Holick, Edward Weldon...................2 a........Bryan.
Holland, Horace Furman.................'17 E.......Jefferson.
Graduate Jefferson High School.
Holland, Jesse Mercer, Jr..............'17 M......Lakeland, Fla.

Hollingshead, Frank Adolphus	'16	Ch	Ganado.
Holloway, Louis Edward	'15	Ag	Dallas.
Holmes, Neill Shaw	'17	Ag	Fayetteville, N. C.
Homann, Frederick Adolph	'15	M	New Braunfels.
Graduate New Braunfels High School.			
Hook, Donnie Leon	'16	C	Denison.
Graduate West High School.			
Hooker, Guy Burch	'17	M	Silsbee.
Hoppe, Roland Charles	'17	M	Cypress Mills.
Horn, Jeffie Neal	'17	Ag	Athens.
Hubbard, Edmund Paul	'17	E	Lampasas.
Graduate Lampasas High School.			
Hudgins, John LaFayette	'18	Ag	Houston.
Hudson, Gay	'16	Ag	Celeste.
Hudspeth, Clarence Chancey	'15	E	Hondo.
Huebner, Louis Henry Alfred	'17	Ar	Shiner.
Graduate Shiner High School.			
Hughes, William Henry	1	a	Richmond.
Hull, Joseph Henry	'18	Ag	Carthage.
Graduate Carthage High School.			
Hurdle, Eugene Franklin	'15	C	Slayden, Miss.
Hurt, Sam Fuqua	'18	Ag	Austin.
Irby, Benjamin Earle	'17	Ar	Beaumont.
Graduate Beaumont High School.			
Jackson, Archie Clingmon	'18	Ag	Kosse.
Jackson, Willie Wood	'18	Ag	Liberty Hill.
Jalufka, Jerome William	1	m	Schulenburg.
James, James Ray	'17	E	Hamlin.
Graduate Hamlin High School.			
Jameson, Jackson Hart	'18	Ag	Montague.
Japhet, Dan Eric	1	t	Houston.
Jarrett, Ed Lee	'16	E	Valley Mills.
Graduate Valley Mills High School.			
Jarrett, J. C., Jr	'18	Ag	Valley Mills.
Graduate Valley Mills High School.			
Jarvis, Fred Bond	2	a	Leakey.
Jarvis, Joseph Robert	'15	Ch	Brandon.
Graduate Brandon High School.			
Jeffers, William Warren	1	e	Rotan.
Jenkins, Joe Alphaeus	'17	Ag	Caldwell.
Graduate Caldwell High School.			
Jennings, Edgar Petty	'16	Ag	Martindale.
Graduate Martindale High School.			
Jennings, Robert Quincy	'17	Ag	Martindale.
Graduate Martindale High School.			
Jobson, Charlie Culberson	'18	Ag	Mesquite.
Johnson, Albert Denarvous	'16	Ag	Kaufman.
Johnson, Aubrey Lee	'18	Ag	Hubbard.
Johnson, Edwin	'18	Ar	Waco.
Johnson, Harry Hubbard	'17	Ag	Eagle Lake.
Johnson, James Henry	'17	E	Bertram.
Graduate Temple High School.			
Johnson, Olaf Konstantine	'17	Ar	Waco.
Graduate Douglas Select School.			
Johnson, Thomas Elmer	1	a	Floresville.
Johnson, Willie Henry	1	a	College Station.
Jonas, Henry Fulton	'18	E	Houston.
Jones, Cecil Charly	1	a	Gainesville.
Jones, Lafayette Poindexter	'15	Ag	Temple.
Jones, Roy Colster	Sp	Ag	Myra.
Jopling, Homer Augustus	'16	Ar	Wharton.
Graduate Trinity High School.			
Jordan, George Frank	'17	Ag	Nacogdoches.
Graduate Nacogdoches High School.			

Joy, Whitney Orvan..................'16 E.......Ingram.
Joyce, John Berry ....'17 E.......Brady.
Judd, Frank Wallace.................'18 Ag......Fort Worth.

Keasler, Edgar F....................'18 Ag......Mineral Wells.
Keasler, Thomas Frank...............'16 Ag......Mineral Wells.
Keefer, Elbert Owen.................'18 M.......North Zulch.
Keeling, William Henley............. 1 e........Wortham.
Graduate Wortham High School.
Keith, Walter Thompson...............Sp Ag....Hempstead.
Graduate Hempstead High School.
Kelly, David Cleveland..............'16 Ch......Greenville.
Graduate Greenville High School.
Kemper, Daniel Adelbert.............'18 E.......Denison.
Graduate Denison High School.
Kenan, Wilder.......................'18 C.......Seymour.
Graduate Seymour High School.
Kendrick, Burrell Meredith..........'18 Ag......Waco.
Graduate Waco High School.
Kendrick, James Marcellus...........'17 Ag......Waco.
Graduate Douglas Select School.
Kennard, Hartwell Jones.............'18 Ag......Gonzales.
Graduate Gonzales High School.
Kerbow, Herbert Ralph...............'16 Ar......Clarendon.
Kiber, Daniel Henry.................'17 Ag......Corsicana.
Graduate Corsicana High School.
Killough, Hugh Baxter...............'16 Ag......Center Point.
Kimbell, Agee.......................'18 C.......Ennis.
Kincheloe, James Matson.............'15 Ag......Hubbard.
King, George Leonard................ 1 a.......Seguin.
Kingswell, John William.............'18 C.......Angleton.
Graduate Angleton High School.
Kinnard, Albert William, Jr.........'15 Ag......Bryan.
Knickerbocker, Harry Clayton........'18 C.......Temple.
Knolle, Byron Frank.................'18 C.......Ellinger.
Knolle, Miles.......................'15 Ag......Industry.
Koerth, Charles John................'18 Ag......Brady.
Konvicka, John George Edwards.......'18 M......Moulton.
Kothmann, Damon Harry................Sp Ag....Castell.
Kotzebue, Leon Lightner.............'17 Ag......Flatonia.
Graduate Flatonia High School.
Kristek, George Henry...............'16 E.......Flatonia.
Kurtz, Lawrence Archie..............'17 E.......Seadrift.

Landers, Jesse Culberson............'17 Ag......Cleburne.
Langford, Ivan......................'17 E.......Georgetown.
Lanier, Willis Fletcher............. 1 a.......Beech Grove.
Lauderdale, Jefferson Davis.........'18 Ag......Somerville.
Lawhon, Guy Bryan................... 1 e........Boerne.
Graduate Boerne High School.
Lawrence, Walter Hayden.............'18 Ag......Cameron.
Graduate Cameron High School.
Leary, John Benjamin Rex............'17 Ag......San Antonio.
Leathers, Leroy Kinch................Sp Ag....Lelia Lake.
Lee, Homer Goodson.................. 2 a.......Comanche.
Lee, Raymond Morton..................Sp Ag....McCune, Kan.
Lee, Thomas Nugent.................. 2 a.......Eckert.
Leffel, Robert Carr.................'18 Ag......San Angelo.
Lill, John Frank.................... 2 a.......Panhandle.
Lipscomb, Thomas Garland............'18 E.......Saron.
Lochridge, Robert Napoleon...........Sp Ag....Iowa Park.
Lockett, William Cureton............'16 E.......Cleburne.
Loftus, Luke Witt...................'18 C.......Dolores.
Graduate Laredo High School.
Logan, William Bryant...............'18 E.......Austin.
Long, Aretas William................ 2 a.......Childress.

Long, George Alvin	'17	Ag	Greenville.
Long, Robert Newton	'18	M	Pearsall.
Looney, Benjamin Franklin	'18	Ag	Austin.
Lowe, Harold Mathis	'17	M	Oakes, N. D.
Lowry, Richard Cohron	'17	E	San Antonio.
Ludeman, Lawrence Louis	'18	Ag	Chillicothe.
Graduate Chillicothe High School.			
Luker, John Will	1	a	Proctor.
Lusby, Herbert Preston	1	a	Santa Barbara, Cal.
Lyle, Francis Marion	'17	Ag	Quinlan.
Graduate Quinlan High School.			
Lyne, Eugene Scott	'17	M	Houston.
McAshan, Raymond Henry	1	a	Houston.
McCampbell, Robert Floyd	2	a	San Antonio.
McCarty, Stuart Clare	'15	C	Taylor.
McClane, Sykes Sanford	1	a	Kenedy.
Graduate Kenedy High School.			
McCollum, Hollie Travis	'15	Ag	Valley View.
McConnell, Willie Louie	Sp	C	San Saba.
Graduate San Saba High School.			
McDaniel, George Edward, Jr	'17	C	Mertens.
McDougald, Neill Robinson	1	e	Groveton.
McEnroe, Patrick John	1	e	Diboll.
MacFadden, Samuel Poole	'16	E	San Antonio.
Graduate San Antonio High School.			
MacFadden, Willford	'18	Ag	San Antonio.
Graduate San Antonio High School.			
McFarland, Hugh	'17	Ag	Brownwood.
McGilberry, Alton Earl	'16	Ag	Shiro.
McGregor, Joel Ira	'16	Ag	Millican.
McIntosh, Henry LeeRoy	'18	E	Brackettville.
Graduate Brackett High School.			
McIver, James Dalrymple	'16	Ag	Lexington.
McKaig, Robt. D	Sp	Ag	Springfield, Ohio.
McKimmey, John Clyde	'18	Ag	Gustine.
McKnight, John Banning	'17	Ag	Carlsbad.
McLean, Archie Reynolds	'18	E	Orange.
Graduate Orange High School.			
McMillan, Roy Dillard	'17	Ag	College Station.
Malloy, Henry Platter	'16	Ag	Palestine.
Mann, John Adam	'17	Ag	Dallas.
Manning, Llewellyn Rigsby	'18	E	Calvert.
Mansker, William Pierce	'17	M	Moody.
Martin, Anderson Marion	'18	E	Waco.
Graduate Douglas Select School.			
Martin, Charlie Brady	'16	Ag	Bryan.
Martin, Daugherty Exline	'17	C	Waxahachie.
Martin, Everett Clifton	'18	Ag	Bryan.
Martin, Sam Winford	'17	Ag	Morgan.
Martin, William Patrick	'15	Ag	Rotan.
Mason, Herbert Marion	'18	Ag	Waco.
Mason, Stephen Kearny	'15	C	San Antonio.
Mathis, Claude Melvin	'18	C	Goliad.
Graduate Goliad High School.			
Matthews, Charles Herbert	1	a	Eagle Lake.
Mattox, Jesse Kuykendall	'17	E	Greenville.
Graduate Pearsall High School.			
Mauldin, Edward	'16	E	Lancaster.
Maxwell, William Wortham	'18	Ag	Austin.
May, Robert Livingston	2	a	Tolbert.
May, Wright Byrd	'18	Ag	Silverton.
Mayo, Harry Mash, Jr	'15	Ag	Houston.
Melendez, Constantino	1	a	San Antonio.
Melton, Joseph Henderson	'18	Ag	Leonard.
Menke, Edgar Paul	'15	Ag	Hempstead.

Menn, Hubert Leopoldt	'17	Ag	Yorktown.
Graduate Yorktown High School.			
Menzies, William	'17	Ag	Menard.
Meriwether, Gay Clifford	'16	E	Tampico, Mex.
Merrell, Robert Erroll	'18	AE	Keller.
Metcalfe, Penrose Blakely	'16	Ag	San Angelo.
Metcalfe, Samuel Little	'17	Ag	Pearsall.
Graduate Pearsall High School.			
Meyer, James Victor	'16	Ag	Flatonia.
Graduate Flatonia High School.			
Middlebrook, Earl	'18	M	Bay City.
Middleton, Willie Green	1	a	Hillsboro.
Milikien, Marion Alvin	2	a	New Waverly.
Miller, Alden Deloss	'17	E	Denton.
Graduate Denton High School.			
Miller, Herman Edward	'16	Ag	Bellville.
Miller, Jennings Bryan	'18	E	Ladonia.
Miller, Roy Boon	'18	E	Springtown.
Mills, Clyde Atteberry	2	a	Lancaster.
Milner, Drinkard Blacknall	'17	Ar	Henderson.
Minear, Richard Percy	'18	Ag	Fort Stockton.
Minier, George Rider	'18	Ag	Waco.
Graduate Waco High School.			
Mitchell, Merlin	'17	Ag	Gainesville.
Graduate Gainesville High School.			
Moffett, George Clarence	'16	Ag	Chillicothe.
Graduate Chillicothe High School.			
Mogford, Fritz William	'18	Ag	London.
Mogford, Joseph Sayers	'16	Ag	London.
Montague, Frank Orum	'15	Ag	Rockdale.
Graduate Rockdale High School.			
de Montel, Emmett Joseph	'18	E	Hondo.
Montgomery, Roark	'17	Ag	Corsicana.
Moore, Dudley Spencer	'18	Ag	Lampasas.
Graduate Lampasas High School.			
Moore, Isaac George	'17	T	Hubbard.
Moore, John Hartwell	'15	Ag	DeKalb.
Moreland, Banks George	'17	Ch	Fort Worth.
Morgan, George Bason	'18	C	Greenville.
Graduate Greenville High School.			
Morgan, Henry Julius	'16	C	Temple.
Graduate Temple High School.			
Morgenstern, Louis W	1	a	Houston.
Morris, George Cooper	'18	E	Dallas.
Graduate Dallas High School.			
Morris, Thomas Kyle	'16	Ag	Valley Mills.
Graduate Valley Mills High School.			
Morrison, Otho Key	'17	C	Hamilton.
Graduate Hamilton High School.			
Morrow, Joseph Spencer	2	a	Arlington.
Moses, Andrew	'16	Ag	Rogers.
Graduate Lampasas High School.			
Moses, Harry Bowman	'18	E	Burnet.
Moses, Robert Lewis	'18	Ag	Rogers.
Graduate Lampasas High School.			
Moss, Mac Augustin	'15	C	Izora.
Mosty, Mark	'18	Ag	Kerrville.
Graduate Tivy High School.			
Mottern, Lloyd Oliver	'18	E	Donna.
Graduate Donna High School.			
Mottley, Kennard Claib	'18	Ag	Longview.
Mowery, Irl Holden	'15	Ag	Almeda.
Munsch, Cornelius Aloysius	'18	Ag	Rosebud.
Graduate Rosebud High School.			
Murchison, Clayton Edward	'18	Ag	Menard.
Murphy, William Michael	'16	Ch	Quanah.

Myer, Cecil Daniel....................'18 M......Houston.
Myers, Harry S........................'18 Ag......Jolly.
Graduate Henrietta High School.
Mynatt, Jesse Herman................'16 E.......Gunter.

Nagle, Edgar Thomas.................'18 Ag......Manor.
Graduate Manor High School.
Nail, Ben Miles.......................'17 Ag......Crawford.
Nash, John Forbes....................'15 E.......Belton.
Nash, Robert Fletcher.................'18 E.......Crystal City.
Neeld, James Ed.......................'18 E.......Lometa.
Nelson, Claude Marion....................Sp Ag....Hereford.
Newman, Lewis.........................'17 Ag......Matador.
Neyland, Orlando Lawrence.............'18 Ag......Brady.
Nichols, Rowland Virgil................ 1 a.......Kerrville.
Graduate Tivy High School.
Nisbet, Walker Robert.................'16 Ag......San Angelo.
Nolte, Howell..........................'18 E.......San Angelo.
Norwood, Stephen Allen................ 1 e........Donna.
Graduate Donna High School.
Nowlin, Henry Burford................ 2 a.......Valley Mills.
Graduate Valley Mills High School.
Nussbaum, Claude Albert...............'18 Ag......Mexia.
Nussbaum, Roy.........................'18 E.......Groesbeck.
Graduate Groesbeck High School.
Nutt, Milburn Ellis...................'18 Ag......Granbury.
Graduate Granbury High School.

Oberthier, Fred Holmsley..............'17 Ag......Hereford.
O'Brien, Floyd........................'16 E.......San Antonio.
Graduate State Orphan High School.
O'Conor, Robert.......................'16 Ag......Laredo.
Oglesby, Enslie Orsen.................'16 E.......Mertzon.
Oliver, Amory.........................'18 E.......Lampasas.
Graduate Lampasas High School.
Olson, Oscar Rudolph..................'16 M......Galveston.
Olson, Palmer Henry...................'16 C.......Clifton.
Graduate Clifton High School.
Otto, John August.....................'17 Ag......Ottine.
Overton, James Frank..................'17 E.......Fort Worth.
Owen, Arthur George...................'16 C.......Double Bayou.

Palmer, George Clark..................'15 Ag......Dunn.
Parks, John Duncan....................'17 Ag......Rusk.
Patterson, Edwin Bridgers.............'16 E.......Goodnight.
Peabody, Albert Lawson................'17 Ag......Corpus Christi.
Graduate Fort Worth High School.
Pedigo, Maxie Smith...................'16 Ag......Valley Mills.
Graduate Valley Mills High School.
Pereira, Clodoaldo Guedes.............'18 M......Parahyba do Norte, Brazil.
Perkins, Paul Richard.................'16 Ag......Nacogdoches.
Graduate Nacogdoches High School.
Perrin, Arthur Charles................'17 M......Boerne.
Perrin, Stanley Ezra..................'17 Ag......Boerne.
Persons, David Henry..................'15 Ag......Hico.
Graduate Hico High School.
Peters, Edgar Milton..................'15 Ag......Hondo.
Graduate Marshall Training School.
Peters, Noah Linton...................'17 AE......Hondo.
Graduate Hondo High School.
Peutet, Jean Paul.....................'17 Ag......Dallas.
Phillips, James Kolb..................'17 Ag......Rockdale.
Phillips, Jackson Marion..............'18 Ag......Lima.
Pickens, Johnie Prince................ 1 a.......Athens.

Pierson, John Cleveland	'16 Ag	Haskell.
Graduate Haskell High School.		
Pinkston, Lucian Albert	'16 M	Corsicana.
Pitts, Robert B	'18 E	Grand View.
Platt, George Alfred	'18 Ag	Houston.
Ponder, Leander Elvin	'17 Ag	Bryan.
Porter, Thomas Sharp	'16 Ag	Boyd.
Potter, Mark Milton	'18 E	Galveston.
Powers, Garland Arch	'17 Ag	Lockhart.
Powers, Tom Searcy	'18 E	Bryan.
Graduate Bryan High School.		
P'Pool, Howard Oates	1 e	Wall.
Prell, Randolph Fred	2 a	Brazoria.
Prestridge, Kenneth Kade	'17 C	Alvarado.
Graduate Alvarado High School.		
Prewett, Roma Charles	Sp Ag	Fort Worth.
Price, Alexander Johnson	'18 E	Galveston.
Price, James Byron	Sp Ag	Nacogdoches.
Priester, Lewis Arnold	'17 E	Richmond.
Graduate Richmond High School.		
Priester, Leslie Emil	'18 E	Richmond.
Graduate Richmond High School.		
Prime, Wendell Francis	'18 C	Houston.
Graduate San Antonio High School.		
Punchard, Herbert Gillespie	'17 Ag	Riesel.
Purcell, Clyde Marsh	1 a	Galveston.
Raborn, Garland Walter	'17 E	Weatherford.
Rack, Edgar Charles	'15 E	Waco.
Graduate Douglas Select School.		
Randall, Richard Owen	'17 E	San Antonio.
Rasbury, Edgar Leonidus	'18 Ag	Ballinger.
Rawlings, Carter Thomas	'18 Ag	Bronte.
Ray, Clint Haggard	1 a	Pettus.
Ray, Paul Franklin	'16 Ag	Belton.
Graduate Belton High School.		
Ray, William Jewell	'18 Ag	Jewett.
Read, Charles Henry	'18 Ag	Memphis.
Graduate Memphis High School.		
Read, William Kyle	2 a	Deport.
Reeves, Ely Harris, Jr	'18 Ag	Pittsburg.
Reeves, Newman Walter	Sp Ag	Childress.
Regenbrecht, Ferdinand	'16 E	Sealy.
Graduate Sealy High School.		
Reily, Jacob Merlin	1 a	D'Hanis.
Graduate D'Hanis High School.		
Reily, Paul Patrick	Sp Ag	D'Hanis.
Reynolds, William LaFayette	'15 M	Buck.
Richardson, James Samuel	'16 Ag	Henderson.
Riesner, Edmund Laritz	'16 C	Houston.
Rigney, Emory Elmo	'18 Ag	Leonard.
Robert, David Richard	1 t	Albany.
Robert, Jack Baker	'16 Ag	Albany.
Roberts, Harry Homer	'18 E	Dawson.
Graduate Dawson High School.		
Robertson, John Marshall	'16 M	Ganado.
Robson, William Sion	'16 Ag	La Grange.
Graduate La Grange High School.		
Roe, Peter Henry	'17 E	San Antonio.
Rogers, Joe Carroll	'18 M	Hondo.
Graduate Coronal Institute.		
Rogers, Larkin Connelly	Sp Ar	Bryan.
Rogers, Victor Lee	'16 Ag	Kountze.
Graduate Buna High School.		
Rollins, John Wesley	'16 Ag	China.
Rooney, Vernon Lonnie	'18 Ag	Fort Stockton.

Rose, Martin Arden	'18	E	Schulenburg.
Rose, Raymond Lester	1	a	Brady.
von Rosenberg, Leslie August	'16	Ar	Hallettsville.
Graduate Hallettsville High School.			
von Rosenberg, William Edward	'18	Ag	Hallettsville.
Graduate Hallettsville High School.			
Rosenfield, Joseph Levy	'16	C	Galveston.
Ross, Henry	1	a	Del Valle.
Ross, Jacob Carl	'18	Ag	DeLeon.
Graduate DeLeon High School.			
Rothe, Hans Hugo	'17	Ag	Hondo.
Graduate Hondo High School.			
Rountree, John Blackwell	'17	Ag	Rockdale.
Royder, Douglas Edell	1	a	Wellborn.
Royder, Douglas Roland	1	a	Wellborn.
Ruckman, Frank Haskins	1	a	Karnes City.
Runge, Hans Eyl	'16	T	Galveston.
Russell, George Hill	2	a	Cotulla.
Graduate Cotulla High School.			
Rutan, Wilton Lynn	'15	Ar	Port Arthur.
Graduate Port Arthur High School.			
Rutherford, James Rector	'17	C	Hereford.
Sanders, Andrew Newell	'17	T	Lavernia.
Graduate Lavernia High School.			
Sanders, James Leander	'15	Ag	Lavernia.
Sanders, Marvin Dewitt	'15	Ag	Hubbard.
Sanderson, Thomas Pryor	1	a	Fort Stockton.
Sansom, George Wallace	'15	T	Groesbeck.
Graduate Mart High School.			
Saper, Gustave Alexander	'15	Ch	Houston.
Saunders, Roy Francis	'18	Ag	Blanco.
Graduate Blanco High School.			
Savage, Carl Hamilton	'15	Ag	Bailey.
Savage, Marshall Edward	'17	C	Florence.
Graduate Florence High School.			
Sawyer, Horace Adali	'16	C	Fate.
Schenck, Roger Clyde	'18	Ag	Greenville.
Schimmelpfennig, William Harrington	'17	Ar	Waco.
Schmidt, Archibald Gottfried	'17	M	Eagle Pass.
Graduate Eagle Pass High School.			
Schmitt, William McKinley	1	e	Hondo.
Schoremoyer, Conrad	'18	Ag	Fort Worth.
Schornstein, Raphael Mondra	'16	Ar	Galveston.
Schramm, Albert Charles	'17	Ag	Taylor.
Schuchardt, Donald Vincent	'18	Ag	San Antonio.
Graduate San Antonio High School.			
Schultz, Walter Gustav	Sp	Ag	Fort Worth.
Schulze, Hugo Oscar	2	a	Hilda.
Scott, Daniel Walton	'15	Ag	McKinney.
Scott, Verne	'16	Ag	El Paso.
Scrimgeour, William Boyer	'18	E	Galveston.
Seals, Chester Roscoe	1	a	Archer City.
Seargeant, Albert James	'18	C	Brackettville.
Graduate Brackett High School.			
Seele, Hermann Hugo	'16	E	New Braunfels.
Graduate New Braunfels High School.			
Sengelmann, Gustav Hans Ferdinand	'15	Ag	Schulenburg.
Sengelmann, Klondike Dewey	1	e	Schulenburg.
Sengelmann, Silva Samuel Henry	1	e	Schulenburg.
Settegast, Marion Edward	'18	Ag	Houston.
Sexaner, Will Gottlieb	'18	Ch	San Antonio.
Seymour, Sam K	'18	Ag	Columbus.
Shamblin, Allan Jackson	'18	C	Houston.
Shelton, Clarence Marvin	'18	Ag	Hubbard.
Shelton, Claud Wallace	'18	Ag	Hubbard.

Shelton, Jack	'17	Ag	Brownwood.
Sherley, Andrew Abram	'16	Ag	Anna.
Sherman, Howard C	'18	Ag	Dallas.
Shiner, Vernon Jack	'18	Ag	San Antonio.
Shipp, Karl Alan	'18	E	Lorena.
Short, James Clay	'16	C	Bandera.
Sides, Wesley Kaufman	1	a	Grand Saline.
Graduate Grand Saline High School.			
Sinclair, William Carl	'16	E	Wolfe City.
Singletary, Harry Hunter	'16	E	Atlanta.
Singleton, Darwin Eldredge	'18	E	Lufkin.
Graduate Lufkin High School.			
Skeeler, Leon James	'15	Ch	Orange.
Graduate Orange High School.			
Skeeler, William John	'16	Ag	Orange.
Graduate Orange High School.			
Skinner, Henry Wellington	1	a	Karnes City.
Slagle, Robert Lester	'18	E	Troup.
Graduate Troup High School.			
Slay, Clyde	'16	Ag	Italy.
Slemmons, Jesse	'18	C	Lone Oak.
Graduate Lone Oak High School.			
Smith, Arthur Lee	'18	Ag	Blanco.
Smith, Langston Montgomery	'16	Ag	Tyler.
Smith, Louis Ted	'18	C	West.
Graduate West High School.			
Smith, Michael Gibson	'17	E	San Augustine.
Graduate San Augustine High School.			
Smith, Marvin Wadsworth	'15	E	Overton.
Graduate Overton High School.			
Smith, Philip Basil	'17	Ag	San Augustine.
Graduate San Augustine High School.			
Smitham, Verner	'15	M	Walnut Springs.
Sneed, P. L., Jr	'18	Ag	Montgomery.
Snow, Oron Lynn	'18	C	Bangs.
Spalding, James Cash	'18	Ag	Dallas.
Graduate Dallas High School.			
Spencer, Donald Allison	'18	Ag	Crosbyton.
Spencer, James West	'18	Ag	Alvord.
Spencer, Oliver Forbes	'17	Ag	Crosbyton.
Spiller, Kyle	'18	C	Jacksboro.
Splawn, George Watson	1	a	Greenwood.
Spong, Samuel Cleo	'18	M	Rockwall.
Graduate Rockwall High School.			
Sprott, Earl Mack	1	a	Killeen.
Sramek, John Neil	'16	M	Bryan.
Staerker, Otto	'18	C	Cuero.
Standifer, Lilburn Echols	'17	Ag	Spur.
Graduate Spur High School.			
Stangel, Wenzel Louis	'15	Ag	Fort Worth.
Graduate North Fort Worth High School.			
Stansell, Robert David	Sp	Ag	Celeste.
Starnes, Jesse Lee	'18	Ag	San Antonio.
Graduate Marshall Training School.			
Stayton, George Kleberg	1	a	Corpus Christi.
Stearns, Roy Earl	'18	Ag	Waco.
Graduate Waco High School.			
Steiner, Eugene	Sp	Ag	Waco.
Stephens, Uel	'16	C	Lometa.
Graduate Lometa High School.			
Stevenson, Donald Alfred	'18	Ag	Galveston.
Stieber, Charles Hostrasser	'17	T	Rock Springs.
Stiles, Marvin	1	a	Ohio.
Stiles, Robert Walker	'16	Ar	San Antonio.
Stiles, William Lyford	2	a	San Antonio.

Stockton, Haywood Paul, Jr.............'17 C.......Louise.
Graduate Louise High School.
Stockton, Leveridge Samuel.............'18 Ag......Louise.
Graduate Louise High School.
Stoner, Charles Dewitt.................'16 E.......Lakeland, Fla.
Stribling, Simpson Ridley...............'15 E.......Waco.
Striebeck, Herbert William..............'18 C.......Floresville.
Strieber, Jesse Edwin.................. 1 m.......Yorktown.
Graduate Yorktown High School.
Stroman, Govan Napoleon..............'17 Ag......Uvalde.
Graduate Uvalde High School.
Swink, Wilmer Turner..................'17 Ag......Dawson.
Swope, John Gordon....................'17 E.......Houston.

Tabor, George Reed, Jr.................'17 Ag......Crystal City.
Graduate Crystal City High School.
Tanner, Carl...........................'16 Ag......Wolfe City.
Tarkington, Shelby Grant...............'18 Ag......Yoakum.
Tarlton, Richard Toulmin.................Sp Ag....Hillsboro.
Taulman, Ottie Lloyd..................'18 Ag......Hubbard.
Tautenhahn, William Frederick Paul..... 1 a.......Westfield.
Taylor, Delos Eugene..................'17 Ag......Blum.
Taylor, Oly Otis.......................'16 E.......Corsicana.
Graduate State Orphan High School.
Teague, Charles Leroy.................. 1 a.......Knox City.
Temple, Theodore Watkins..............'17 C.......Weatherford.
Terrell, Tully Vernon.................. 1 a.......Decatur.
Graduate Decatur High School.
Thaxton, Robert Calvin................'16 Ag......Mason.
Graduate Mason High School.
Thodberg, Victor Willard...............'18 Ag......Comanche.
Thomas, Charles Leonard...............'16 Ag......Marfa.
Graduate Marfa High School.
Thomas, Edwin Wayne..................'17 Ag......Marfa.
Graduate Marfa High School.
Thomason, James Hendon..............'16 Ag......Huntsville.
Thomson, John Throckmorton........... 1 a.......San Angelo.
Tighe, Louis Thomas...................'18 E.......Sour Lake.
Graduate Sour Lake High School.
Tigner, John Hughes...................'15 Ag......House.
Timm, Henry Otto.....................'17 E.......Hallettsville.
Graduate Hallettsville High School.
Torti, Maurice Leo.....................'16 Ag......Tyler.
Graduate Tyler High School.
Trant, Robert Pope....................'18 Ag......Bryan.
Trickey, Charlie Thomas................'17 C.......Sanger.
Graduate Sanger High School.
Tuerpe, Elmer Christopher.............. 2 t........Benton.
Tuerpe, Ellis Richard.................. 2 t........Benton.
Tumlinson, Otto Gurvas................'18 Ag......Verdi.
Turnage, Rodger Elmo.................'16 E.......La Grange.
Turner, Homer Howard.................'18 Ag......Rockdale.
Turner, Joseph Marston, Jr.............'15 Ag......Chenango.

Uhr, Irwin Adolph.....................'17 E.......San Antonio.
Underwood, John Carson, Jr............'17 Ag......Houston.
Graduate Houston High School.
Upson, Mark Florea....................'18 Ag......Sabinal.

Vance, John William...................'16 Ag......Gouldbusk.
Van Hutton, Edgar.......................Sp AE....La Grange.
Vaughan, Hardy Allen..................'18 Ag......Hewitt.
Veale, Monroe Bell..................... 1 a.......Breckenridge.
Vernor, John Wilbur.................... 1 e........Lampasas.
Graduate Lampasas High School.
Volz, Alphons Franklin................. 1 a.......Mission.

Waak, Walter	2 a	Bellville.
Graduate Bellville High School.		
Wadley, Burr Plevin	'17 Ag	Ferris.
Waggoner, Thomas Adlai	1 e	Duncanville.
Walker, Albert Alvia	'17 C	Rockwall.
Walker, Jordon Alfred	'18 E	Rockwall.
Walker, John House Beyne	1 a	Houston.
Walker, James Knox	'18 C	Azle.
Walker, John Thaddeus	'17 C	Azle.
Walker, Littleton Samuel	1 a	Waldrip.
Wallace, Henry Clay	1 e	Belton.
Walton, Robert Frank	'17 M	Hubbard.
Ward, Myron Frank	1 a	San Antonio.
Ware, Henry Grady	'17 Ag	Kemp.
Warren, Charles Fredrick	'15 Ag	Hewitt.
Washam, Oscar Floyd	'15 Ag	Crawford.
Graduate Hico High School.		
Waterhouse, Walter Howard	'16 Ag	St. Louis, Mo.
Watkins, William Howard	'18 E	San Antonio.
Graduate San Antonio High School.		
Watson, Edward Italy	'18 C	Galveston.
Watson, John Leroy	'15 Ag	Stephenville.
Watson, Robert Lee	'18 M	Navasota.
Weaver, Alford Bradley	'17 E	Rule.
Webb, John Edgeworth	'18 Ag	Bryan.
Graduate Allen Academy.		
Weigel, Dave Wilson	Sp Ag	Little Rock, Ark.
Weiler, Lewis Forest	1 a	Corsicana.
Wellage, George Francis	'16 Ag	Eagle Pass.
Wendlandt, Charles Fred Julius	Sp Ag	Austin.
Wendler, Eugene	1 e	Boerne.
Westerhoff, Frederick William	'18 Ag	Moulton.
Graduate Sam and Will Moore Institute.		
Whatley, Alva White	2 a	Calvert.
White, Jesse Egbert	'16 E	Gainesville.
Graduate Gainesville High School.		
White, James Earnest	'18 E	Jewett.
Graduate Jewett High School.		
White, Kenneth Reignald	Sp Ag	Somerville.
Whitely, Felix Elbert	'18 M	Alpine.
Graduate Alpine High School.		
Whitney, Raymond Lee	'18 Ch	Tyler.
Graduate Tyler High School.		
Whittet, Chester Stiggins	'15 Ch	Anchorage.
Whitton, Robert Benjamin	'17 Ag	Timpson.
Graduate Timpson High School.		
Wilkerson, Muldrow Perry	'18 M	Navasota.
Willett, Noyes Waters	'18 E	Thurber.
Williams, Clayton Wheat	'15 E	Fort Stockton.
Williams, Richard Stokely	'16 T	Thorpe.
Williams, Stump Marvin	'17 Ag	Corsicana.
Williamson, Payne Lee	'18 E	Kerrville.
Graduate Tivy High School.		
Wills, James Valliant	'18 C	Bruceville.
Wilson, Charles Sebastian	'15 M	Bryan.
Wilson, Frank William	'17 Ag	Port Lavaca.
Graduate Port Lavaca High School.		
Wilson, Joe Clay	'18 Ag	Normangee.
Graduate Normangee High School.		
Wilson, Newton Walton	'18 Ag	Lockhart.
Graduate San Marcos High School.		
Wilton, Edgar Fremaux	'17 Ag	Houston.
Wimberly, Clifford Clarence	'17 Ag	Whitfield.
Winfrey, Guy	1 e	Petrolia.
Winston, Barlow	'18 Ag	Cisco.

Winston, Walter Clinton................'17 E.......Bay City.
Graduate Bay City High School.
Winters, Harvey Emmett............... 1 a.......Stephenville.
Wipprecht, Carl.......................'18 Ag......Bryan.
Wipprecht, Read.......................'17 Ag......Bryan.
Wise, Fred Calvin.....................'18 Ag......Spring Hill, La.
Wisrodt, Clarence Emil Philip...........'15 Ag......Galveston.
Witcher, Loftin Verdery.................'16 Ag......Fort Worth.
Graduate Fort Worth High School.
Wood, William Maxwell..................'17 Ag......Hubbard.
Woodson, James Monroe................. 1 a.......Temple.
Woody, George Abe.....................'17 M......Tilden.
Wooten, Ralph Hudson..................'16 Ag......Senatobia, Miss.
Worthington, George Edward...........'18 C.......Mesquite.
Graduate Mesquite High School.
Wotipka, Walter Martin................'17 Ag......Flatonia.
Graduate Flatonia High School.
Wynn, Charles Clinton..................'17 Ag......Bryan.

Yates, Horace Conrad...................'18 AE......Henderson.
Graduate Henderson High School.
Yearwood, Albert Boyce................'18 Ag......Georgetown.
Yeary, Horace Edwin...................'15 Ag......Farmersville.
Graduate Farmersville High School.
Yeary, James Carroll...................'15 Ag......Farmersville.
Graduate Farmersville High School.
Yeates, Clarence Carpenter.............'17 E.......Katy.
Young, John Irion.........................Sp Ag....Montgomery.
Young, James McDonald................'18 Ag......Hallettsville.
Graduate Hallettsville High School.
Young, Roy Lester......................'15 E.......Hallettsville.
Graduate Hallettsville High School.
Youngblood, Elzy Otis..................'17 E.......Vernon.
Graduate Vernon High School.

Zedler, Otto Frederick Christian.........'16 E.......Ottine.
Zuber, Neill Daniel.....................'15 Ag......Bryan.
Zuehl, Albert...........................'17 M......Lavernia.

SUMMER SCHOOL OF COTTON CLASSING, 1914.

Allyn, H. W...Marianna.
Barclay, Charles......................................Reagan.
Blair, D. T..Oakville.
Bridges, Hays...Henderson.
Brown, W. L...Gordon.
Buchanan, J. F..Sealy.
Cameron, C. C...Lexington.
Carriker, J. E...Center.
Chaney, C. N..Mesa.
Clark, C. I..Prairie Lea.
Cole, E. W..Wharton.
Davis, J. M...Waco.
Deal, J. B...Edna.
DeMaret, S. E...Bryan.
Dial, W. L...Dialville.
Draper, W. G..Overton.
Easterly, Joe..Easterly.
Eliot, H. M..College Station.
Ellsberry, T. B..Marlin.
Fisher, C. E...Port Lavaca.
Fletcher, B. J...Lexington.
Garrett, M. T..Merrimac.
Glass, N. P..Cleburne.
Griffin, Jack...Cleburne.

Hall, O	Floyd.
Harper, B. F	Martindale.
Harper, H. T	Ganado.
Hinckle, Joseph	DeKalb.
Hurley, W. M	Melon.
Huston, R. E	Henderson.
Jones, C. B	Killeen.
Kotek, J. M	Kaufman.
Langdon, Y. M	Hutchins.
Lowrey, G. A	Paducah.
McCall, Ed	Waco.
McHargue, W. C	Mound.
Maddox, L. P	Weatherford.
Mangum, W. H	Weldon.
Marberry, Roy	Victoria.
Marshall, W. S	San Antonio.
Menke, E. G	Guadalupe.
Mikeska, J. J	Placedo.
Peter, R. J	Winchester.
Peters, O. W	Hondo.
Pfeil, R. A	Cibolo.
Prewitt, F. G	Gatesville.
Ray, J. A	Gary.
Richardson, L. N	Georgetown.
Rowland, R. C	San Antonio.
Roye, E. L	Cleburne.
Scales, W. F	Thorndale.
Scheel, W. C	Lockhart.
Scherz, A	Timpson.
Shannon, E. L	Hillsboro.
Shatto, A. P	Weimar.
Shook, C. J	Pearl.
Simpson, H. L	Terrell.
Slovacek, J. R	Buckholts.
Stephenson, Hugh	Beeville.
Strange, L. C	Riesel.
Tatum, C. S	College Station.
Twaddell, D. Y	Hubbard.
Waite, Mann	Reagan.
Wendlandt, C. F. J	Austin.
Williams, T. W	Era.
Wilson, J. A	Charlotte.
Youngblood, T	Belton.
Zachery, J. B	Brady.
Zeigler, J	Otto.

SHORT SUMMER COURSE FOR FARMERS, 1914.

Acker, H. W	Whitehouse.
Adams, G. W	Midland.
Alsmeyer, E. C	Mission.
Anderson, G	Terry.
Arledge, J. G	Crockett.
Arnold, L	Greenville.
Ashburn, F. S	Emory.
Astin, Mrs. Ervin	Bryan.
Bagwell, J. F	Wharton.
Baker, S. N	Lakeview.
Banks, R. L	Weatherford.
Banzhof, G	Rockdale.
Barry, J. K	Smithville.
Bedell, W. T	Marshall.
Beeson, H. W	Lovelady.
Bell, A. K	Gonzales.
Benson, J. W	Sinton.
Benton, H	Amarillo.

Bittle, G. M	Bryan.
Black, G	Ballinger.
Brigance, W. H	Brazoria.
Brigance, Mrs. W. H	Brazoria.
Brous, H. B	Granbury.
Brown, Mrs. Maud	Athens.
Buchanan, A. W	Bryan.
Burkhalter, H. P	Vernon.
Calvert, W. C	Sweetwater.
Campbell, J. W	Holliday.
Carson, Mrs. A. B	Bryan.
Carson, Mrs. A. R	Bryan.
Chaney, A. T	Mineral Wells.
Christoffer, J. T	Athens.
Christoffer, R. H	Mart.
Clarke, Frank	Fort Worth.
Cleveland, Frank	Vidor.
Click, Mrs. Mae	Beeville.
Coates, F	Waco.
Coker, Miss Nina	Mt. Pleasant.
Collier, C. M	Goliad.
Collier, Homer	Waco.
Collier, R. B	Hearne.
Collins, S. F	Mart.
Combs, J. M	Kountze.
Connor, S. G	Mesquite.
Craddock, F. J	Denton.
Cunyus, J. P	Longview.
Curtis, R. R	Gainesmore.
Day, Mrs. Bertie	Livingston.
Day, J. R	Livingston.
Davis, R	Mt. Vernon.
Davis, Mrs. Roger	Mt. Vernon.
Davis, W. E	Austin.
Day, G. E	Nacogdoches.
Day, J. H	Nacogdoches.
DeMaret, D. C	Bryan.
DeMaret, S. E	Bryan.
Drake, J. G	Lockhart.
Dulin, W. A	Colorado.
Durrenberger, I. A	Pearsall.
Eagan, J. M	Ballinger.
Eastepp, Burl	Pennington.
Eastepp, H. D	Pennington.
Eaton, D. F	Comanche.
Edmonds, J. R	Quitman.
Eisentrant, J. C	Beaumont.
Erickson, J. H	Greenville.
Ervin, N. B	Titus.
Eudaly, G. W	Fort Worth.
Evans, Mrs. C. M	College Station.
Evard, A. M	Rockdale.
Evard, Mrs. A. M	Rockdale.
Finch, J. M	Longview.
Folsom, C. T	Mound.
Ford, J. O	Tell.
Fowler, W. C	Ballinger.
Frazier, Mrs. Daisy M	Springfield.
Gainer, Mrs. Charles	Bryan.
Ganzer, Wm	Denton.
Gatewood, G. R	Cleburne.
Gherzi, S. E	Paso del Rio Colima, Mex.
Gilbert, J. J	San Antonio.
Giles, T. J	Mason.
Gilliland, D. B	Coleman.

Green, W. F	Mound.
Greer, J. D	Carthage.
Griffin, J. W	San Saba.
Griffith, B. W	Magnet.
Griffith, C. L	Magnet.
Gruss, E. W	Galveston.
Haggard, Miss Cordie	Mt. Pleasant.
Hand, W. G	San Antonio.
Hanks, T. P	Jefferson.
Harral, V. P	Gonzales.
Harrington, Miss Susie L	Dallas.
Harris, O	Garrison.
Hathaway, C. F	Big Spring.
Havard, O	Hightower.
Hawkins, S. R	Tell.
Hays, A. C	Kirkland.
Henny, E. A	Riviera Beach.
Hill, I. W	Washington, D. C.
Hornbeak, J. W	Corsicana.
Hovenkamp, L	Keller.
Hovenkamp, M	Keller.
Hughes, J. E	Kempner.
Hunter, L. T	Henrietta.
Jenkins, T	Jourdanton.
Johnson, G. W	Corpus Christi.
Johnson, J. B	Teneha.
Johnson, M. J	Cadiz.
Jones, R. M	Leggett.
Kalb, Miss Elizabeth	Wosumonk Farm.
Kennamer, Mrs. Sarah L	Agua Dulce.
Kloppenburg, J	Jourdanton.
Knight, J. E	Teneha.
Kolberg, O. G	Eagle Lake.
Kosse, M. E	Dallas.
Kuehne, Emil	Austin.
Kyle, Mrs. E. J	College Station.
Latham, A. M	Stephenville.
Lester, R. L	Orange.
Liles, E. M	Chilton.
Lilley, A. O	Shepherd.
Lindholm, O. E	Pearsall.
Locke, Miss Lucy	Zack.
Locke, Miss Mary	Zack.
Lofland, W. T	Hillsboro.
Lyne, J. A	Houston.
McCain, H. O	Greenville.
McIlhenny, M	Mission.
McInnis, Miss Malcolm	Bryan.
McLelland, G. P	Winters.
McMaster, Wm	Clarksville.
McWilliams, L	Ballinger.
Maddox, Miss Mary Sue	Weatherford.
Mann, R. E	Childress.
Marks, T. M	Jacksboro.
Marstellar, Mrs. R. P	College Station.
Martin, B. B	Liberty.
Martin, Mrs. L. P	Stephenville.
Martindale, Mrs. Cora	Lockhart.
Matthews, C. P	Como.
Matthews, D	Athens.
Means, H. M	Big Spring.
Means, Mrs. H. M	Big Spring.
Means, R. M	Andrews.
Melms, Chas	Pearsall.
Melms, Mrs. Chas	Pearsall.
Menke, E. G	Guadalupe.

Messenger, G. C	Frion.
Metcalfe, T. P	Amarillo.
Milner, Y. A	Henderson.
Minter, R. M	McAllen.
Mitchell, Mrs. A	College Station.
Myers, D. C	Cookville.
Myers, Mrs. J. A	Bryan.
Neely, Miss Imogene	Roscoe.
O'Brien, Mrs. R. P	Beaumont.
Orms, G. W	Mineola.
Paschal, J. W	Dallas.
Payne, M. T	Temple.
Payton, B. R	Austin.
Peddicord, J. B	Asherton.
Persons, R. W	Bay City.
Pipkin, J. A	Waco.
Plaster, W. M	Bedias.
Potts, Mrs. A. T	College Station.
Preston, J. A	Paducah.
Price, D. O	Hemphill.
Prince, A. H	Orange.
Puckett, G. W	Asherton.
Quicksall, J. F	Cleburne.
Quicksall, J. L	Waco.
Railey, C. C	Midland.
Ramsey, J. B	Timpson.
Rapalee, M. J	Sulphur Springs.
Rhoads, M. B	Vernon.
Robinson, O. H	Goldthwaite.
Rode, A	Brenham.
Roitsch, H	La Grange.
Roquemore, T. G	DeBerry.
Ross, W. H	Dallas.
Runnels, L	Willis.
Sanderford, A. J	Ranger.
Sbisa, Mrs. B	College Station.
Scott, Lee	Marshall.
Sebesta, J. S	La Grange.
Seitz, O. K	Anchorage.
Short, F. C	Sherman.
Shuddemagen, E. G	Sabinal.
Sisk, W. G	Emory.
Smith, G. A	Beaumont.
Smith, R. F	College Station.
Snedecor, V. G	Richmond.
Spencer, A. J	Alvord.
Stallings, W. L	Livingston.
Stanford, J. E	Woodville.
Stanley, J. G	Riverside.
Steiner, E	Waco.
Stephens, J. E	Pearland.
Stiles, H. A	Taylor.
Stitt, O. J	Memphis.
Strange, D. M	Pittsburg.
Suber, Miss Corrie	Bryan.
Sumrall, L. G	Brenham.
Trackett, R. O	Oakville.
Tandy, A. N	Brownsville.
Thompson, G. F	Mesquite.
Thornton, J. H	Liberty.
Thurman, Miss Lizzie	Gainesville.
Tidwell, J. R	Franklin.
Tisdal, N. R	Huntsville.
Townsend, Luther	San Antonio.
Townsend, W. E	Port Arthur.
Trigg, Chas	Milano.

Vandiver, M. H	Canton.
Van Kirk, A. S	Bonham.
Volkert, Willie	Burton.
Waldrop, L	Longview.
Walker, H. F	Blessing.
Walter, C. K	Kaufman.
Walton, T. O	Livingston.
Ward, C. F	Brownwood.
Warren, D. C	Midland.
Weaver, W	Sealy.
White, H. H	Keller.
White, Ray	Keller.
Wilhite, E. C	Cookville.
Wilkinson, L. C	Edna.
Williams, Mrs. Buster	Bryan.
Williams, Murphy	Corsicana.
Williams, S	Clarendon.
Wolcott, F. F	Midland.
Wolcott, H	Midland.
Wood, Kimble	Ballinger.
Wood, T. B	Groveton.
Wright, A. P	Mission.
Youngblood, Mrs. B	College Station.
Youngblood, Mrs. Tom	Belton.

SHORT WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY SURVEYORS, 1915.

Hunnicutt, Lee Varnado	Marlin.
Phillips, C. R	Weatherford.

SUMMARY OF ATTENDANCE, 1914-1915.

REGULAR SESSION.

Class.	Agr.	Arch.	A. E.	Ch. E.	C. E.	E. E.	M. E.	T. E.	Total
Graduates	4	..	..	..	..	..	1	..	5
Seniors	56	3	..	5	12	13	6	2	97
Juniors	70	8	4	5	18	29	9	2	145
Sophomores	107	8	1	2	25	44	22	6	215
Freshmen	152	3	3	8	37	46	22	1	272
Specials	34	1	1	1	1	..	2	..	40
Two-Year Courses—									
First Year	77	..	..	..	..	23	3	6	109
Second Year	28	..	..	..	..	..	..	3	31
Total	528	23	9	21	93	155	65	20	914

Enrollment, Regular Session	914
Summer School of Cotton Classing, 1914	69
Summer Course for Farmers, 1914	239
Winter Course in Civil Engineering, 1915	2
	1224
Names counted twice	6
Total Enrollment, 1914-15	1218

DEGREES AND HONORS CONFERRED AT THE THIRTY-EIGHTH ANNUAL COMMENCEMENT.

(June 9, 1914.)

MASTER OF SCIENCE.

Caesar Hohn,
B. S., A. & M. College of Texas, 1912.

Hsiang-yueh Moh,
B. S., University of Illinois, 1913.

MECHANICAL ENGINEER.

Lemuel Munroe Johnston,
B. S., A. & M. College of Texas, 1913.

BACHELOR OF SCIENCE.

In Agriculture.

Ayers, E. L.
Ball, B. C.
Beasley, W. G.
Boyett, D. C.
Bradley, E. I.
Brundrett, H. M.
Courtney, O. K.
Fisher, J. K. G.
Gibbens, E.
Goodwin, J. C.
Green, R.
Hoepfner, F. W.
Irby, A. H.
James, O. J.
Jordan, G. F.
Killough, D. T.
Lane, G. I.
Lenert, A. A.
McDowell, J. C.
McGinnis, P. T.
Melton, W. B.
Miller, A. C.
(As of 1913)
Parr, V. V.
Phillips, F. Roy
Reed, W. N.
Rich, L. G.
Runge, J. F.
Simpson, J. N.
Snider, J. B.
Sparkman, F. A.
Stallings, J. H.
Stelzig, E. H.
Stroud, M. L.
Tanner, E. L.
Warren, C. B.

In Architecture.

Knox, G. P.
Wear, H. A.

In Architectural Engineering.

Clement, C. B.

In Civil Engineering.

Broome, W. S.
Camp, G. D.
Davis, T. C.
Farthing, W. E.
Mayers, H. P.
Powell, L. H.
Schmidt, F. H.
Tinker, E. B.

In Electrical Engineering.

Baker, H. K.
Biggers, C. A.
Braunig, H. E.
Fouraker, L. L.
Fouraker, R. S.
Groginski, P.
Hill, S. S.
Jones, W. T.
Levy, D. H.
Miller, V. W.
Parker, E.
Pickens, D. B.
Schuwirth, W. C.
Vossler, J. M.

In Mechanical Engineering.

Harrison, J. C.
Herrington, J. J.
Jennings, A. L.
Kotzebue, M. H.
Peterson, J. A.
Rollins, M. E.
(As of 1913)
Schaefer, S. E.
(As of 1913)
Scott, F. L.
Slay, S. H.

CERTIFICATES IN TWO-YEAR COURSES.

In Agriculture.

Ballard, J. C.
Bolton, H. T.
Boutwell, W. J.
Burrus, S. T.
Coleman, J. E.
Crow, L. C.
Duck, I. B.
Holman, J. R.
Jones, L. C.
Luedtke, E. H.
McGown, G.
Meinscher, W. E. A.
Peutet, J. P.
Vance, J. B.

In Textile Engineering.

Corley, J. R.
Garrity, J. P.

SUMMARY OF DEGREES CONFERRED.

Advanced Degrees:		
Master of Science	2	
Mechanical Engineer	1	
		3
Baccalaureate Degrees:		
B. S. (In Agriculture)	35	
B. S. (In Architecture)	2	
B. S. (In Architectural Engineering)	1	
B. S. (In Civil Engineering)	8	
B. S. (In Electrical Engineering)	14	
B. S. (In Mechanical Engineering)	9	
		69
Total		72

DISTINGUISHED STUDENTS.

At the end of each session students who have during the year received no term grade below "B" and who have no deficiency in "Practice," are announced as "Distinguished."

SENIOR CLASS.

Bradley, E. I.
Broome, W. S.
Killough, D. T.
Lenert, A. A.
Rich, L. G.
Stallings, J. H.

JUNIOR CLASS.

Bugbee, J. S.

SOPHOMORE CLASS.

Camp, T. R.
Erskine, W. S.
Keasler, T. F.
Mathewson, L. M.
Metcalfe, P. B.
Olson, P. H.

FRESHMAN CLASS.

Cook, W. B.
Earnest, L. H.
Elam, W. N.
Gibson, M. B.
Kroschel, J. A.
Uhr, I. A.
Williams, J. W.

TWO-YEAR COURSE IN AGRICULTURE.

First Year.	Second Year.
May, R. L. Nowlin, H. B.	Duck, I. B.

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

Second Year.

Corley, J. R.

REGIMENTAL ORGANIZATION 1914-1915.

The Corps of Cadets is organized as a Regiment of Infantry of three Battalions, Band and Bugle Corps.

Second Lieutenant James R. Hill, 13th Cavalry, U. S. A.
Commandant of Cadets.

James M. Kenny, Quartermaster-Sergeant, U. S. A., Retired.
George Smart, First Sergeant, U. S. A., Retired.
John C. Hyland, Ordnance-Sergeant, U. S. A., Retired.
Assistant Commandants.

B. P. Day, Chief Musician.

ASSIGNMENTS TO ORGANIZATIONS.

E. N. Hogue, Colonel.
V. C. Denton, Lieutenant Colonel.

Regimental Staff.

1. C. J. Davis, Captain and Adjutant.
9. G. H. Senglemann, Captain and Quartermaster.
4. J. S. Bugbee, Captain and Commissary.
5. C. S. Wilson, Captain and Ordnance Officer.

Regimental N. C. Staff.

R. H. Wooten, Sergeant Major.
J. B. Robert, Regimental Quartermaster Sergeant.
G. J. Cornett, Regimental Commissary Sergeant.
H. B. Killough, Regimental Ordnance Sergeant.
A. D. Bruce, Color Sergeant.

Band.

10. O. W. Greene, Captain.
4. B. H. Faber, First Lieutenant.
12. C. H. Savage, Second Lieutenant.
19. W. W. Carson, Second Lieutenant.
H. E. Runge, Drum Major.
6. T. K. Morris, First Sergeant.
12. M. S. Pedigo, Sergeant.
21. L. H. August, Sergeant.
31. E. L. Jarrett, Sergeant.
42. L. A. Von Rosenberg, Sergeant.
32. G. B. Hanson, Corporal.
45. W. H. Schimmelpfenning, Corporal.
62. E. C. Tuerpe, Corporal.
63. E. R. Tuerpe, Corporal.

Bugle Corps.

W. K. Hanson, Chief Trumpeter.
11. N. E. Gardner, Corporal.
23. G. C. Crow, Corporal.
33. J. A. Mann, Corporal.
75. J. P. Garitty, Corporal.

First Battalion.

2. J. R. Jarvis, Major.
2. C. F. Warren, First Lieutenant and Adjutant.
1. B. H. Dickie, Second Lieutenant and Quartermaster.
E. D. Baccus, Sergeant Major.

Company A.	Company B.	Company C.	Company D.
Captains.			
17. O. F. Washam	13. F. O. Montague	8. I. H. Mowery	3. E. M. Peters
First Lieutenants.			
16. J. E. Bell	6. W. L. Rutan	11. J. C. Yeary	13. S. K. Mason
Second Lieutenants.			
15. G. W. Adriance	6. W. C. Coleman	18. J. C. Collins	7. J. L. Sanders
21. A. R. Campbell	26. V. A. Barraco	29. H. T. McCollum	11. F. A. Homann
First Sergeants.			
13. M. S. Beringer	5. J. C. Short	7. L. C. Dennis	4. J. D. Brown

Sergeants.

Company A.	**Company B.**	**Company C.**	**Company D.**
9. W. E. Braumiller	8. C. Tanner	6. H. C. Carleton	1. A. Dickie
64. S. P. McFadden	27. O. F. Zedler	17. J. I. McGregor	13. J. V. Curnette
28. F. L. Bramlette	39. I. T. Hockaday	25. F. R. Coleman	32. A. Moses
66. N. M. Braumiller	50. F. O'Brien	37. R. E. Turnage	43. J. F. Ehlert
51. M. T. Garrett	59. J. L. Henry	44. H. A. Jopling	53. O. O. Taylor
60. E. E. Aldridge	71. L. V. Witcher		72. A. C. Eschenburg
Corporals.			
4. A. F. Buchanan	5. J. S. Morrow	18. R. D. Elliott	9. F. W. Wilson
15. D. E. Martin	16. J. W. Hester	21. M. B. Gibson	20. C. A. Mills
26. W. T. Barbee	27. J. T. Walker	31. W. B. Cook	30. J. R. Barnes
48. L. Langford	37. J. H. Johnson	42. E. B. Cartwright	41. J. B. Joyce
64. J. Bivins	66. S. R. Craig	53. V. T. Billups	52. G. A. Powers
87. B. G. Moreland	67. J. A. Otto	81. D. L. Harris	59. J. G. Beasley
	68. J. C. Underwood		85. H. H. Rothe

Second Battalion.

3. F. W. Cawthon, Major.
1. L. W. Brown, First Lieutenant and Adjutant.
3. G. A. Saper, Second Lieutenant and Quartermaster.
P. H. Olson, Sergeant Major.

Company E.	**Company F.**	**Company G.**	**Company H.**
Captains.			
11. J. H. Moore	7. G. R. Dunning	2. E. O. Francisco	6. S. F. Clark
First Lieutenants.			
9. M. D. Sanders	15. C. W. Williams	14. H. F. Ellis	12. A. W. Kinnard
Second Lieutenants.			
8. A. E. Burges	13. J. F. Nash	14. W. B. Francis	17. L. E. Holloway
10. H. E. Yeary	23. S. C. McCarty	22. H. H. Gammill	28. W. S. Gillespie
First Sergeants.			
11. A. D. Johnson	10. P. B. Metcalfe	1. C. M. Easley	3. A. C. Bull
Sergeants.			
65. H. A. Sawyer	4. J. V. Meyer	11. L. M. Smith	3. G. H. Kristek
73. H. R. Kerbow	15. C. Hausser	20. T. R. Camp	14. J. M. Robertson
10. J. H. Thomason	24. J. S. Mogford	30. J. L. Foster	23. J. E. White
34. L. H. Hagaman	36. U. Stephens	41. D. Burns	35. A. C. Casey
45. C. B. Hefner	47. D. L. Helm	52. C. H. Gunn	46. E. B. Patterson
	56. G. Hudson	74. H. S. Clarke Trophy Sergeant	55. F. A. Hollingshead
Corporals.			
6. J. M. Holland	8. T. W. Temple	3. R. E. Glover	2. W. O. Farthing
17. M. J. Conway	19. J. B. Rountree	14. C. F. Braunig	13. J. Shelton
69. N. L. Peters	29. L. L. Kotzebue	25. J. T. Hanway	24. W. T. Galliford
49. M. S. Duncan	40. A. G. Schmidt	36. R. F. McCampbell	35. M. M. Bridgwater
56. P. B. Dunkle	51. R. C. Lowery	70. R. F. Walton	47. J. L. Gibbs
84. F. H. Oberthier	58. W. T. Swink		76. J. P. Peutet
	83. P. H. Roe		82. L. E. Ponder

Third Battalion.

1. R. R. Allen, Major.
3. V. Smitham, First Lieutenant and Adjutant.
2. D. W. Scott, Second Lieutenant and Quartermaster.
J. W. Rollins, Sergeant Major.

Company I.	**Company K.**	**Company L.**	**Company M.**
Captains.			
14. E. R. Eiland	12. C. C. Hudspeth	15. P. T. Crown	16. E. C. Rack
First Lieutenants.			
10. C. E. P. Wisrodt	7. J. R. Alexander	5. G. C. Palmer	8. W. M. Smith
Second Lieutenants.			
9. J. H. Browder	20. R. L. Young	5. E. R. Girardeau	4. P. W. Clarkson
24. L. J. Skeeler	27. H. M. Mayo	16. E. F. Hurdle	25. W. P. Martin

	First Sergeants.		
Company I.	**Company K.**	**Company K.**	**Company L.**
2. T. F. Keasler	9. E. L. Riesner	8. G. C. Moffett	12. D. C. Kelly
	Sergeants.		
19. E. O. Oglesby	7. H. E. Miller	5. A. R. Hawkins	2. W. A. Collins
29. V. W. Crawford	18. H. J. Morgan	16. R. A. Hall	22. W. R. Nisbet
40. W. J. Skeeler	26. R. Hawes	68. G. C. Meriwether	33. W. J. Crocker
61. G. F. Wellage	38. C. D. Stoner	48. R. J. Cole	54. T. S. Porter
63. C. Slay	49. J. D. McIver	57. F. Burkett	70. W. H. Waterhouse
67. J. A. Connor	58. J. C. Pierson	69. V. Scott	
	Corporals.		
43. E. O. Youngblood	1. L. A. Kurtz	10. A. W. Long	7. C. O. Denning
54. H. P. Stockton	12. D. B. Milner	22. L. Newman	28. F. W. Halsey
60. W. B. Curtis	34. R. W. Briggs	44. J. A. Jenkins	39. E. J. Hamner
71. B. P. Wadley	46. O. K. Morrison	55. G. M. Elliott	50. L. H. Earnest
80. J. M. Kendrick	72. J. A. Darby	61. W. N. Elam	57. M. D. Gilfillan
86. C. A. Dutton	78. E. R. Allen	73. F. J. Hockaday	74. F. A. Crow
	79. H. Gill	77. D. H. Kiber	65. C. C. Halbedl

NOTE.—The numbers indicate the lineal rank.

THE HOWELL TROPHY.

The Howell Trophy is a handsome Texas Flag, presented to the College in 1903 by Mr. W. S. Howell, of Bryan, Texas. A competitive drill is held each session during Commencement to determine the best drilled company. The successful company is designated as the "Trophy Company" and carries the Trophy during the following session. It is authorized to elect a "Trophy Sergeant" who is the Color Bearer.

The Trophy Company for the session of 1914-15 is Company G.

ALUMNI.

(Association Organized 1886.)

P. L. DOWNS, Temple	President
C. O. MOSER, Dallas	First Vice-President
R. J. WINDROW, Waco	Second Vice-President
V. V. PARR, Waelder	Third Vice-President
D. T. STEVENS, Bryan	Secretary-Treasurer
F. J. SKEELER, Orange	Assistant Secretary-Treasurer

Executive Council.

P. L. DOWNS. C. O. MOSER. D. T. STEVENS. HAL MOSELEY.

On the following pages are given the names of all graduates of the College, with the Courses of study pursued and the degrees obtained; their occupations and residences are also given as far as known. The alumni are requested to aid the Secretary of the Association in making the roll as accurate as possible. Each alumnus should send the Secretary a postal card at the opening of each session, giving his address and occupation.

From the opening of the College in 1876 to its reorganization in 1880, the studies were elective, and led to appropriate degrees. Degrees received in this interval are noted in the list of names.

From 1881 to 1887 there were two prescribed courses, the Agricultural and the Mechanical, but no degrees were given.

From 1888 to 1895 there were four prescribed courses, leading to the degrees of Bachelor of Scientific Agriculture (B. S. A.); Bachelor of Civil Engineering (B. C. E.); Bachelor of Scientific Horticulture (B. S. H.); Bachelor of Mechanical Engineering (B. M. E.).

From 1895 to 1901 the four prescribed courses remained the same, but the degree in each was Bachelor of Science (B. S.), the particular course being specified in the diploma.

In 1901 the Horticultural course was merged with the Agricultural. In 1903 the course in Electrical Engineering was added; in 1904, the course in Textile Engineering; in 1905, the course in Architectural Engineering; in 1908, the course in Chemical Engineering, and in 1909, the course in Architecture, making eight regular courses leading to the degree in Bachelor of Science (B. S.) in Agriculture, in Architecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering and in Textile Engineering.

The courses of study are indicated by the use of Roman numerals, as follows:

I. Agriculture.
II. Horticulture.
III. Mechanical or Mechanical Engineering.
IV. Civil Engineering.
V. Electrical Engineering.
VI. Textile Engineering.

VII. Architectural Engineering.
VIII. Chemical Engineering.
IX. Architecture.

Names of deceased alumni are marked with an asterisk.

ABBOTT, E. G., 1894, IV, Captain Coast Artillery, United States Army, Fort Wood, Bedloe's Island, N. Y.
ABBOTT, H. T., 1898, II, Bookkeeper, 4010 Cedar Springs, Dallas.
ABNEY, CARLTON C., 1905, IV, Bank Clerk, Lampasas.
ABNEY, G. R., 1906, IV, Civil Engineer, Eagle Lake.
ABRAHAMS, J. E., 1900, III, Cashier, with Jos. Landa, New Braunfels.
*ABRAHAMS, M. L., 1903, III.
ACKER, L., 1902, IV, Roadmaster, H. & T. C., Ennis.
ADAMS, R. E., 1910, IV, Hardware Merchant, Santa Anna.
ADAMS, A. S., 1895, IV, Engineer, Bryan.
ADAMS, F. L., 1892, I, Farmer and Merchant, Snyder.
ADAMS, LEM, 1908, IV, Draftsman, Oregon Short Line, Pocatello, Idaho.
ADAMS, Q., 1912, VII, with Cravens & Cage, Houston.
ADAMS, T. A., 1908, VI, Mining Engineer, Inde Gold Mining Co., Inde, Durango, Mex.
ADICKES, C. F., 1910, IV, Fred A. Jones Co., Dallas.
ADKISSON, W. T., 1910, IV, U. S. Eng. Corps, Shreveport, La.
*ADRIANCE, D., 1886, I. M. S., 1890, Bryan.
AGUAYO, N. A., 1904, III, Parass, Mex.
AHRENBECK, W. T., 1891, III, Minister, Huntsville.
AKERS, M. E., 1902, IV, Farmer, Stowell.
ALDWELL, R. E., 1909, V, Cashier, First National Bank, Sonora.
ALEXANDER, D. E., 1880, Fort Worth.
ALEXANDER, M. R., 1913, IV, Navasota.
ALEXANDER, R. L., 1902, IV, 320 Hutton Bldg., Spokane, Wash.
ALLEN, F., 1906, V, Campbellton.
ALLEN, L. E., 1881, III, Manager Allen's City Drug Co., Marlin.
ALLEN, W. H., 1888, I, Physician and Surgeon, Marlin.
ALTGELT, E. J., 1892, IV, Real Estate, San Antonio.
ALTGELT, E. S., 1904, IV, Civil Engineer, San Antonio, Box 902.
AMSLER, L. D., 1889, III, Cashier Farmers' National Bank, Hempstead.
AMTHOR, A. W., 1895, IV, Civil Engineer for Brownsville Land and Irrigation Co., Brownsville.
ANDERSON, J. V., 1913, IV, Abilene.
ANDERSON, R. O., 1913, III, Westinghouse Machine Co., Pittsburg, Pa.
ANDERSON, W. D., 1890, I, Manager Ice Works, Waxahachie.
ANDREWS, V., 1884, III, Physician, Floydada.
APPERSON, R. S., 1913, V, care Crocker-Wheeler Co., Ampere, N. J.
ARMSTRONG, J. F., 1906, III, Mining, Guanajuato, Mexico, Box 33.
ARMSTRONG, M. F., 1882, III, Real Estate and Banking, Mission.
ARNESON, E. P., 1910, IV, Light and Power Co., San Antonio.
ARNOLD, E. C., 1906, III, Chemist for Inde Gold Mining Co., Inde, Durango, Mexico.
ASHFORD, G. W., 1912, V, General Elec. Co., Schenectady, N. Y.
ASHTON, JOHN, 1906, I, Ranchman, Linares, N. L., Mexico.
ASTIN, E. H., 1899, III, Banker, Bryan.
ATWELL, B. D., Jr., 1912, V, W. E. & M. Co., Wilkinsbury, Pa.
ATWELL, C. S., 1912, IV, Surveyor U. S. Eng. Corps, Hutchins.
AYERS, E. L., 1914, II, Department of Agriculture, Austin.
BAADE, J. E., 1911, VII, Waco.
BACKUS, U. J., 1890, III, Farmer, Eagle Pass.
BAILEY, C. C., 1892, IV, Cashier First National Bank, Bartlett.
BAINES, H., 1906, V, Traffic Dept., S. W. Tel. and Tel. Co., Waco.
BAKER, H. K., 1914, V, Haskell.
BAKER, L. A., 1910, V, Westinghouse Electric Co., 500 Kelly St., Wilkinsburg, Pa.
BAKER, J. J., 1879, Merchant, Homer, La.
BAKER, SEARCY, 1882, III, Assistant Manager South Texas Lumber Co., Houston.
BALL, B. C., 1914, I, Mansfield.
BALL, W. A., 1912, V, Engineer, Corpus Christi.
BALLARD, LUKE L., 1905, I, Stock Farmer, Waco.
BANKS, A. L., 1879, B. S., 1892, M. S., 1895, Professor of Mathematics, College of Industrial Arts, Denton.
BARCLAY, R. L., 1898, III, President and Manager Reed Transfer Co., Temple.
BARHAM, G. S., 1902, III, Physician, Nacogdoches.
BARHAM, R. E., 1903, IV, Engineer, Nacogdoches.
BARNES, G. W., 1911, I, Extension Dept. A. & M. College, Stillwater, Okla.
BARNES, R. M., 1898, III, General Merchant, Abilene.
BARNES, S. E., 1899, I, DeLaval Separator Co., 165 Broadway, New York.
BARNITZ, R. B., 1912, VII, 2nd Lieutenant U. S. A., Fort Clark.
BARWIS, I. G., 1910, VII, Architectural Draftsman, Fairfield, Iowa.
BASS, R. O., 1909, V, Electrician, Los Angeles, Cal.
BATTE, T. R., 1902, IV, Chief Engineer Rio Bravo Oil Co., Houston.
BAUER, F., 1904, III, Ginner, Burton.
BAUM, J. A., 1903, IV, Civil Engineer, Georgia.
BAYLOR, R. E., 1913, IV, Instrument Man, Panama Canal, Balboa.
BEALL, V. Z., 1908, IV, Student M. I. of Tech., 263 Newbury, Boston, Mass.
BEAN, B., 1907, IV, C. E., 1909, Civil Engineer, Los Angeles, Cal.
BEASLEY, W. G., 1914, I, Brenham High School, Brenham.
BEAUREGARD, R. T., 1910, IV, M. of W. Dept. T. & B. V. Ry., Teague; Home address, San Antonio.

BEAZLEY, C. N., 1913, IV, Grapeland.
BECHERT, F. J., 1911, III, M. E., 1912, 1913, Ch. E., Instructor, M. E. Dept., College Station.
BECKER, ADOLPH, 1905, I, Merchant, Brenham.
BEEMAN, T. R., 1903, IV, Locating Engineer, C., M. & St. P. R. R., 617 White Bldg., Seattle, Wash.
BEESLEY, T. J., 1908, III, Manager Rockdale Oil Co., Rockdale.
BEESLEY, W. S., 1892, IV, Merchant, Abilene.
BEILHARZ, W. E., 1903, III.
BENJAMIN, J. W., 1905, IV, City Engineer, Cuero.
BENTLEY, C. N., 1910, V, Northern Electric Co., Montreal, Canada.
BERNAY, C. L., 1904, IV, Paving and Roads Dept., Texas Oil Co., Houston.
BEYER, F. C., 1892, III, Manager Mason Ice and Power Co., Mason.
*BIBERSTEIN, F. R., 1882, III.
BIERING, S. R., 1902, IV, Chief Claim Clerk, G., C. & S. F. Ry., Galveston.
BIGGERS, C. A., 1914, V, Bonham.
BING, B. L., 1910, I, Farmer, Waller.
BIRK, R. A., 1913, IV, Iowa Park.
BITTLE, P. B., 1896, I, Superintendent City Schools, Henderson.
BITTLE, T. C., Jr., 1900, IV, Farming, Texarkana.
BITTLE, A. W., 1894, I, Principal High School, Washington, La.
BIVINS, M., 1907, V, Mattress Manufacturer, Longview.
BLACK, M., Minister, Sterling City.
BLACK, R. S., 1907, IV, Nacoyari, Sonora, Mexico.
BLACKALLER, G. A., 1911, I, Stockman, Frio Town.
BLACKMON, G. H., 1910, Waxahachie Nursery Co., 1627 Elm St., Dallas.
BLAKE, H. H., 1907, IV, Markham.
BLAKE, T. W., 1904, I, Gen. Sales Mgr. South Texas Lumber Co., Houston.
*BLAKEMORE, T. E., 1880.
BLAND, L. F., 1899, I, Medical Student, Memphis, Tenn.
BLEDSOE, F. F., 1880, Minister, Bedias.
BLOCK, J. A., 1912, IV, Houston.
BLOOR, A. W., 1895, I, Attorney, Austin.
BLOUNT, S. L., 1896, I, U. S. Veterinary Inspector, Bureau of Animal Industry, Department of Agriculture, 913 W. Lenda St., Fort Worth.
BOCOCK, J. H., 1894, I, Traveling Salesman, Thaxton, Va.
BOETTCHER, R. B., 1900, III.
BOGEL, W. W., 1907, V, Marfa.
BORCHERT, W. C., 1913, IV, Kyle.
BORN, THOMAS C., 1905, I, General Contractor, Houston.
BOURLAND, W. F., 1913, IV, Rodman S. A. & A. P. Ry. Co., Yoakum.
BOWER, L. J., 1913, I, Stephenville.
BOWER, W. E., 1908, V, Farmer, R. F. D. No. 5, Hico.
BOWLER, S. E., 1913, V, Fort Worth.
BOYCE, CHARLES W., 1905, I, Farmer, Charco.
BOYCE, W., Jr., 1907, IV, Roadmaster C. G. W. R. R., Chicago, Ill.
BOYETT, D. C., 1914, I, Bryan.
BOYETT, H., 1912, IV, Bryan.
BOYKIN, R. E., 1892, III, Teacher.
BOZEMAN, J. R., 1912, V, Unsan, Korea.
BRADLEY, E. I., 1914, I, Memphis.
BRANDT, R. L., 1906, III, Draftsman, Box 808, San Antonio.
BRANNIN, C. P., 1909, VI, Educational and Vocational Sec., Y. M. C. A., Dallas.
*BRAUN, P., 1888, San Antonio.
BRAUNIG, H. E., 1914, V, Otis Elevator Company, Houston.
BRAUNIG, V. H., 1910, V, Asst. Supt. Elect. Dept., San Antonio Gas and Elec. Co., San Antonio.
BRINKMANN, H., 1906, III, 1907, V, 12 Barrett St., Schenectady, N. Y.
*BRITTINGHAM, W. F., Jr., 1890, IV.
BRETSCHNEIDER, W., 1898, IV, Assistant Superintendent M. of W. Dept., T. & N. O. R. R. Houston.
BREWER, H. A., 1899, III, Farmer, R. F. D. No. 3, Dale.
BRICE, H. A., 1910, IV, Fred A. Jones Co., Birmingham, Ala.
BRISCOE, W. P., 1911, IV, City Engineering Dept., Houston.
BROGDON, S. T., 1908, III, Minister Vanderbilt University, Nashville, Tenn.
BROOME, W. S., 1914, IV, Memphis.
BROWN, B. Mc., 1911, III, Draftsman S. P. Shops, San Antonio.
BROWN, C., 1911, V, S. W. Tel. and Tel. Co., Dallas.
BROWN, C. G., 1906, V, Instructor, Sibley College, Ithaca, N. Y.
BROWN, H. P., 1911, I, Farmer, Mathis.
BROWN, J. F., 1913, V, 1008 Polk Ave., Houston.
BROWN, J. J., 1912, I, Instructor Agriculture, Moore.
BROWN, R. M., 1901, IV, in charge of track, Guayquil & Quito Ry., Box 37, Guayquil, Ecuador, South America.
BROWN, T. H., 1879, Claim Agent T. & N. O. Ry., Houston.
BROWN, W. H., 1880, IV, Planter, Navasota.
BRUCE, E. L., 1894, IV, House of Representatives, Austin.
BRUNDRETT, G. T., 1908, V, with Stone & Webster, Dallas.
BRUNDRETT, H. Mc. E., 1914, II, Mesquite.
BRYAN, B. F., 1897, I.
BRYAN, W. L., 1900, II, Chief Engineer Flour Mills, Celina.
BRYANT, W. T., 1911, VIII, Ch. E., 1913, Asst. in Chemistry, College Station.
BUCHANAN, T. S., 1909, IV, Resident Engineer F. F. C. C. N. of Mex., Ajono, Kilo, 110 Michoacan, Mexico.
BUCKMAN, C. D., 1889, IV, Denison Grocery Co., Denison.
BUCKNER, J. F., 1912, IV, Rodman Santa Fe, Cleburne.
BUFORD, F. L., 1892, IV, Assistant Engineer G., C. & S. F. Ry., Silsbee.
BUHLER, C. M., 1897, III, Chief Clerk, Disbursements, S. P. Co., 7532 Hampson St., New Orleans, La.

BUHLER, C. W., 1892, IV, Chief of Car Department S. A. & A. P. Ry., San Antonio.
BUHLER, W. A., 1900, III, Grocer, Victoria.
BULLARD, T. O., 1899, III, I. & G. N. Shops, Mart.
BURCK, L. B., 1889, IV, Broker, 631 S. Spring St., Los Angeles, Cal.
BURFORD, J. M., 1882, III, Physician and Surgeon, Independence.
BURCHARD, C. L., 1886, III, Cashier, Bank of Goliad.
BURGOON, C. E., 1895, III, M. E., 1899, Eng. Federal Bldg., Chicago, Ill.
BURLESON, R. C., 1912, IV, 1st Lieutenant, U. S. Army, Fort Myer, Va.
BURLESON, R. W., 1895, III, Cashier W. M. & Co. Bank, San Saba.
BURLESON, W. H., 1913, V, Brush Electric Co., Galveston.
BURMEISTER, C. A., 1908, I, U. S. Dept. of Agriculture, Amarillo.
BURNEY, J. W., 1896, III, Lumberman, Kerrville.
BURNEY, R. L., 1906, IV, General Contractor, 416 Conroy Bldg., San Antonio.
BURNS, A. C., 1907, I, Veterinary Surgeon, Cleburne.
BURNS, H. E., 1906, IV, Draftsman Colorado Southern R. R., Beaumont.
BURNS, J. C., 1904, I, Professor of Animal Husbandry, College Station.
BURRITT, W. P., 1906, III, City Engineer, San Antonio.
BURT, F. O., 1910, IV, Contractor, Waco.
BURTON, A., 1913, VII, Instructor in Drawing, College Station.
BUTLER, J. V., 1912, IV, County Road Engineer, Huntsville.
BYARS, G. E., 1910, IV, City Engineer, Waco.
CABANISS, W. M., 1912, V, Draftsman Texas Portland Cement Co., Dallas.
CADE, K. C., 1913, IV, Birkville.
CAIN, R. W., 1913, IV, Cotton Factor, Italy.
*CALDWELL, J. C., 1883, III.
CALDWELL, J. R., 1912, III, Manual Training Teacher, Blanco.
CALDWELL, R. E., 1913, I, care Lackawana Farm, Hillsboro.
CALLAWAY, W. H., 1912, IV, Student Columbia University, New York.
CAMP, G. D., 1914, IV, San Antonio.
CAMPBELL, D., 1879, Stockman, El Paso.
CAMPBELL, P., 1913, V, Weatherford.
CAMPBELL, R. W., 1899, III, President and Bookkeeper Campbell-Hutcheson Hardware Co., Roff, Okla.
CARDWELL, W. W., 1913, I, Lockhart.
CARLIN, W. J., 1910, III, Draftsman City Engineer's Office, Houston.
CARLISLE, E., 1906, I, 38 W. 35th St., New York.
CARPENTER, M. M., 1902, I, Mining Engineer, 66 Scott St., Tucson, Arizona.
CARRINGTON, H., 1912, IV, Civil Engineer, Bay City.
CARROLL, J. G., 1911, V, Westinghouse E. and M. Co., 413 Pitt St., Wilkinsburg, Pa.
CARSON, A. B., 1897, IV, Civil Engineer, Bryan.
CARSON, J. M., Jr., 1886, I, Miraco Co., Dallas.
CARSON, J. W., 1886, I, Director of the Harris County Demonstration Farms, Houston.
CARSON, R. C., 1899, III, Machinist, 1305 N. Robinson St., Cleburne.
CARTER, J. D., 1900, IV, Civil Engineer, 905 Main St., Dallas.
CARTER, J. W., Civil Engineer, El Paso.
CARTER, T. H., 1912, V, Celeste.
CARTER, W. T., Jr., 1898, I, Scientist in Bureau of Soils, Washington, D. C.
CARUTHERS, F., 1885, I, Cashier United States Land Office, Oklahoma City, Okla.
CARUTHERS, R. B., 1912, IV.
CASEY, P. D., 1908, VI, S. W. Tel. and Tel. Co., Dallas.
CAVEN, G. P., 1897, I, Clerk M., K. & T. Ry., 200 San Jacinto St., Dallas.
CAVITT, J. S., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
CAVITT, W. H., 1897, III, Oil Well Contractor, Box 101, Batson.
CELY, H. M., 1910, V, Teacher, Frankston.
CHAMBERS, M. L., 1879, Real Estate and Loans, 501 1-2 Main St., Fort Worth.
CHAMBERS, T. L., 1913, V, with Western Elec. Co., Hawthorn, Chicago.
CHANEY, L. P., 1912, V, Texas City Trans. Co., Texas City.
CHEWNING, J. W., 1913, I, Chemist, Feed Control, College Station.
CHINSKI, C. C., 1913, IV, Beaumont.
CHRISTEN, J. C., 1912, V, 500 Kelly St., Wilkinsburg, Pa.
CHRISTIAN, B. H., 1910, IV.
CHRISTIAN, J. R., 1911, IV; VIII, 1913, Houston.
CHURCH, MARION S., 1905, I, Assistant County Attorney, Dallas County, Dallas.
CHURCH, W. G., 1912, V, General Electric Co., Schenectady, N. Y.
CLARK, H., 1895, I, Physician, Crowell.
CLAYTON, W. D., I, M. S., 1897, Farmer, Wakefield, La.
CLEMENT, C. B., 1914, VII, Port Lavaca.
CLEMENT, T. H., Jr., 1900, IV, Engineer L. H. & G. Ry. Co., Hemphill.
CLONTS, T. P., 1904, IV, City Engineer, Muskogee, Okla.
COBBS, S. A., 1896, IV, Civil Engineer, Muskogee, Okla.
COBBS, T. D., Jr., 1904, IV, Attorney at Law, San Antonio.
COCHRAN, E. G., 1879, Physician and Surgeon, Pearsall.
COCHRAN, J., 1904, IV, C. E., 1905, Trussed Concrete Steel Co., Detroit, Mich.
COCK, C. E., 1911, IV, Contractor, Belton.
COGHILL, E. S., 1911, IV, Inst. Man, U. S. Eng. Corps, Crockett.
COHN, S. L., 1897, IV, Advertising Manager Sherman Oil and Cotton Co., Sherman.
COLE, A. T., 1909, V, Engineering Department Pacific Elec. Ry. Co., Y. M. C. A., Bldg., Los Angeles, Cal.
COLEMAN, M. M., 1910, I, Ranchman, Rodger, N. M.
COLEMAN, N. P., 1911, III, Lineman Bryan Tel. Co., Bryan.
COLLINS, J. A., 1907, V, Louisiana Creosoting Co., Winnfield, La.
COLLINS, J. W. H., 1913, VI, Mexia.
COLLINS, A. B., 1912, V, Inspecting Eng., Elmhurst, N. Y.
CONNELLEE, E. T., 1913, I, Eastland.
CONNER, A. B., 1904, I, Agronomist for Texas Experiment Station, College Station.
CONNER, T. P., 1912, I, Red Oak.
COOK, E. A., 1892, III, Cleburne.
CORLETT, R. H., 1911, IV, Civil Engineer for the Texas Co., Wichita Falls.

CORNELL, A. L., 1908, IV, Auditor M., K. & T. Ry. Co., Denison.
COTTINGHAM, I. A., 1886, III, Assistant General Manager H. & T. C. Ry., 2811 Fannin St., Houston.
COTTINGHAM, W. P., 1892, IV, Manager Texas Blue Print and Supply Co., Houston.
*COTTON, H., 1897, IV.
COUCH, E., 1897, III, City Engineer's Office, Houston.
COULTER, H. T., 1895, II, Physician, Rockdale.
COULTER, W. J., 1895, III, Merchant, Bryan.
*COULTER, R. E., 1901, III.
COURTNEY, O. K., 1914, I, Assistant Entomologist to Experiment Station, College Station.
COUSINS, R. W., 1899, III, Electrical Eng. Ind. Steel Co., Gary, Ind.
COWART, I. E., 1913, I, Instructor in Horticulture, College Station.
COX, D. W. S., 1892, IV, Sales Agent, Dallas.
COX, H. T., 1912, V, Power and Light Co., Hereford.
COX, R. W., 1913, I, Scientific Asst. Sub-Station No. 2, Troup.
COZART, R. B., 1911, III, Assistant Superintendent Lufkin Foundry and Iron Works, Lufkin.
CRAVENS, J. R., 1882, III, General Agent Fire Insurance, Houston.
*CROCKETT, C. M., 1910, IV.
CROCKETT, J. B., 1908, IV, C. E., 1909, Asst. County Engineer, McKinney.
CROUCH, J. H., 1910, V, Salesman, Alvin.
CROW, W. E., 1898, II, Physician, Dallas.
CRUM, J. B., 1911, VII, Bookkeeper American Exchange National Bank, Dallas.
CRUSE, JOHN T., 1905, I, Farmer and Teacher, Eagle Lake.
CULBERTSON, J. L., 1913, I, Waxahachie.
CULVER, DAN, 1908, III, Salesman, Lampasas.
CUNNINGHAM, F. H., 1910, V, Service Agent Otis Elevator Co., Houston.
CUNNINGHAM, A., 1879, Railway Postal Clerk, Palacios.
CUNNINGHAM, P. E., 1907, IV, Junior Engineer Mississippi River Commission, Box 404, Vicksburg, Miss.
CURTIN, W. H., 1912, III, City Eng. Dept., Houston.
CUSHING, D., 1891, III, Pharmacist, Yorktown.
CUSHING, E. B., 1880, III, C. E., 1899, Chief Engineer Construction Sunset-Central Lines, President Board Directors A. & M. College, Houston.
DAHME, A. F., 1904, IV, Engineer, Yorktown.
DALE, I., 1908, IV, Instrumentman, Clarksdale, Miss.
DALE, J., 1908, III, 330 E. 6th St., Oklahoma City, Okla.
DALLMEYER, C. D., 1911, VI, with Swift Mfg. Co., Columbus, Ga.
DARST, T. B., 1911, I, Farming and Stock Raising, Richmond.
DASHIELL, W. R., 1891, IV, Physician, Surgeon for the Victor Fuel Co., Gray Creek, Col.
DAVENPORT, H. S., II, Agriculturist, 2 Crawford St., Palestine.
DAVIS, D. O., 1911, I, Farming, McKinney.
DAVIS, J. M., 1903, IV, Banker, Forney.
DAVIS, J. N., 1885, III, Farming and Stock Raising, Hico.
DAVIS, J. N., Jr., 1913, IV, Hico.
DAVIS, T. C., 1914, IV, Poteet.
DAWSON, N. A., 1884, III, Lawyer, Austin.
DAY, T. R., 1902, I, Real Estate, El Paso.
DAZEY, W. L., 1894, IV, Dentist, Hillsboro.
DEAN, J. S., 1906, VII, Architect, State Architect's Office, Sacramento, Cal.
DELLIS, J. L., 1912, IV, Draftsman Pacific Electric Ry. Co., Los Angeles, Cal.
DEVINE, P. S., 1912, IV, Laredo.
DIBRELL, Z. H., 1910, V, Salesman, Mecca Hotel, Houston.
DICKERSON, A. F., 1910, V, Gen. Elec. Co., Schenectady, N. Y., now Asst. Chief of Illumination P.-P. Int. Exposition, San Francisco, Cal.
DICKERSON, W. E., 1911, IV, County Surveyor, Cuero.
DICKSON, J. L., 1912, IV, Asst. Eng. Freeport T. Wn. Co., Velasco.
DICKSON, R. E., 1912, I, Asst. Agronomist Texas Experiment Station, College Station.
DIETERT, R. H., 1888, III, Car Foreman H. & T. C. Ry., 1214 Prairie St., Houston.
DINTER, H. A., 1911, V, Hico Electric Light and Power Co., Hico.
DODSON, C. P., 1911, V, Manager Light Plant, Nocona.
DONALDSON, C. B., 1893, III, Farmer, Kyle.
DONOHO, W. T., 1913, IV, Utopia.
DORSEY, W. L., 1911, V, Asst. Commandant Peacock's Military College, San Antonio.
DOWELL, H. B., 1913, I, McKinney.
DOWNS, J. R., 1879, Lawyer, Waco.
DOWNS, P. L., Vice-President First National Bank, Temple.
DRIESS, E., Jr., 1913, VI, San Antonio.
DRISDALE, W. E., 1889, II, Physician and Surgeon for Victor-Amer. Fuel Co., Gray Creek, Col.
DROSS, P. H., 1902, III, General Manager F. Marty Foundry Co., Meridian, Miss.
DUDLEY, F. E., 1885, II, Real Estate, Hollywood, Cal.
*DUGAN, G. H., 1881.
DUGGAN, A. P., 1895, IV, Manager Littlefield Lands, Littlefield.
DUNN, R. B., 1904, III, Merchant, Benchley.
DURST, BRUNO L., 1905, IV, Civil Engineer, Dallas.
DWYER, T. J., 1912, IV, International Boundary Com., El Paso.
DWYER, W. F., 1899, I, Car Clerk A., T. & S. F. Ry., Deming, N. M.
EAGLESTON, E. G., 1913, I, Smithville.
EGAN, J. T., 1913, I, Farmer, Haslet.
EDDINS, R. R., 1909, V, Electrician, Marlin.
EDSALL, A. B., 1907, I, Farmer, Spring Creek.
EDWARDS, J. F., 1883, III.
EBERSPACHER, F., 1906, IV, Retail Stationer, 221 N. 20th St., Birmingham, Ala.
EBERSPACHER, G., 1896, III, Machinist S. P. Ry., Houston.
EBERSPACHER, R., 1901, III, Automobile Dealer, Corpus Christi.
EHLERS, P., 1907, V, Automatic Electric Co., Dallas.
EHLERS, V. M., 1905, Sanitary Engineering, La Grange.
EHLERS, W. J., 1910, VII, Architect, Bishop.

EHLINGER, G. E., 1912, I, La Grange.
EHLINGER, L., 1906, IV, Draftsman General Land Office, Austin.
EHLINGER, R. B., 1913, I, Deputy State Feed Inspector, College Station.
EHRHARDT, E. J., 1910, IV.
*ELDRIDGE, H. M., 1897, IV.
ELLIOTT, J. E., 1910, VII, Eng. for Gordon-Jones Const. Co., San Antonio.
ELLIOTT, F. G., 1906, VI, with Bush & Witherspoon, Cotton Brokers, Waco.
ELLIS, H. E., 1910, V, Western Electric Co., Oklahoma City, Okla.
ELLIS, B. V., 1892, I, Physician, 1515 Boulevard St., Houston.
ELLIS, FORT O., 1894, IV, Sheriff and Tax Collector, Harrisonburg, La.
ELLIS, O. L., 1908, V, Telephone Co., Clovis, N. M.
ELROD, H. E., 1901, III, Consulting Engineer, S. W. Life Bldg., Dallas.
ENGLISH, M. G., 1909, IV, Civil Engineer, Port Arthur.
EPPLER, H. G., 1912, V, Cisco.
EPPRIGHT, F. G., 1902, III, Machinist I. & G. N. Shops, San Antonio.
EPSTEIN, S. G., 1907, IV, Resident Engineer, Interurban, Dallas.
ERHARD, E. C., 1903, III, Machinist I. & G. N. R. R. Co., Palestine.
EUDALY, E. R., 1910, I, Livestock and Dairy Agent, Chattanooga, Tenn.
EVANS, C. D., 1899, IV, Civil Engineer, Shreveport, La.
EVANS, C. M., 1908, I, Superintendent Agricultural Extension Dept., College Station.
EVERSBERG, E. A., 1913, I, Brenham.
EVERSBERG, O. L., 1910, I, with Armour & Co., Brenham.
FAIRBAIRN, G. C., 1912, V, Port Arthur Light and Power Co., Port Arthur.
FARMER, A. G., 1895, III, Stockman, Junction.
FARMER, J. S., 1912, I, Mission Irrigated Farm Co., San Antonio.
FARTHING, W. E., 1914, IV, Valley View.
FAUST, H., 1900, III, First National Bank, New Braunfels.
FAUST, W., 1897, IV, Cashier of First National Bank, New Braunfels.
FEARHAKE, J. D., 1889, IV, Attorney, 5 Nassau St., New York City.
FEHRENKAMP, E. B., 1901, IV, Bookkeeper, Kenedy.
FERGUSON, A. M., 1894, II, M. S., 1896, Seed Breeding, Sherman.
FIELD, H. Y., 1891, I, Stock Breeder, Argyle Ave., Dallas.
FIGH, J. R., 1912, I, S. W. Tel. and Tel. Co., Box 1809, Houston.
FINNEY, C. B., 1896, IV, Mining Engineer, Apartado 173, Oax., Mexico.
FISHER, J. K. G., 1914, I, Fort Worth.
FITZGERALD, A. H., 1895, I, Druggist, Gonzales.
FITZGERALD, L., 1900, III, Superintendent G. H. L. & W. Co., Gary, Ind.
FITZHUGH, E. E., 1880, Real Estate, Waco.
FITZPATRICK, B., 1913, IV, Columbus.
FLEMING, C. H., 1908, VI, Bookkeeper, Cisco.
FLOYD, J. F., 1892, III, Lumber Dealer, Texarkana.
FLYNT, H. C., 1890, I, Real Estate, 810 Gunter Bldg., San Antonio.
FORD, F. D., 1911, IV, Cordell, Okla.
FORDTRAN, F. L., 1887, I, Physician, Kerrville.
FORSGARD, C. H., 1911, V, Engineer, Dallas.
FORSGARD, OSCAR L., 1905, IV, Resident Engineer H. & T. C. Ry., Home address, 1204 Holman Ave., Houston.
FORSYTH, J. M., 1912, III, 1913, M. E., with Allis-Chalmers, West Allis, Wis.
FORT, F. W., 1879, Wholesale Grain, Provident Bldg., Waco.
FOUNTAIN, E. J., Jr., 1913, VII, Salesman, Bryan.
*FOUNTAIN, S. J., 1901, IV.
FOUNTAIN, T. D., 1904, IV, Merchant, Dalhart.
FOUNTAIN, T. L., 1901, IV, Civil Engineer, Dallas.
FOURAKER, L. L., 1914, V, Dallas.
FOURAKER, R. S., 1914, V, Dallas.
FOUTREL, G. F., 1898, III, Machinist, 225 S. Presa St., San Antonio.
FOWLER, E. G. R., 1894, IV, Lawyer, Palestine.
FOY, H. F., Jr., 1908, V, Engineer Bell Tel. Co., St. Louis, Mo.
FOY, V. H., 1902, III, S. W. Tel. and Tel Co., Pine Bluff, Ark.
FRANCIS, A. J., 1912, I, College Station.
FRAZIER, B., 1911, I, Manager Clifton Stock Farm, Waco.
FREEMAN, J. H., 1887, III, Insurance Agent, Austin.
FRENCH, W. A., 1913, IV, Kaufman.
FRIES, JOHN, 1912, IV, Levelman S. A., N. & G. Ry., San Antonio.
*FULLER, T. A., 1879.
FURNEAUX, W. H., 1909, I, American Exchange National Bank, Dallas.
GARBADE, W. T., 1901, Adjunct Professor University of Texas, Medical Dept., Galveston.
GARNETT, R. M., 1902, IV, Section Foreman S. P. Ry., Bay City.
GARZA, C. M., 1905, IV, Brownsville.
GEREN, P. M., 1912, VII, Architect, Austin.
GIBBENS, E., 1914, I, Kerrville.
GIESECKE, A. C., 1909, IV, Draftsman Utah L. & P. Co., Salt Lake City, Utah.
GIESECKE, B. E., 1911, VII, Architect, Austin.
GIESECKE, F. E., 1886, III, M. E., 1890, Professor of Architecture, University of Texas, Austin.
GIESECKE, G., 1884, III, Merchant Miller, 228 Washington St., San Antonio.
GIESECKE, W. E., 1892, III, New York City.
GILBERT, C. L., 1911, V, U. S. Army, Fort Adams, R. I., Home Address, Smithville.
GILBERT, J., 1894, I, Physician, Austin.
GILBERT, W. A., 1907, I, Farmer, Mabank.
GILBERT, W. R., Farmer, Austin.
GILLESPIE, S. E., 1903, III, Draftsman, The Murray Co., Dallas.
GILLETTE, P. C., 1913, IV, Bellaire.
GILMORE, H. C., 1896, III, Electrician, Barden Electric Co., Houston.
GIST, BYRON, 1910, I, Stock Farming, Littlefield.
GIST, W. B., 1913, IV, Nocona.
GLASS, R. H., 1904, III, Dentist, Hearne.
GLASS, WILL V., 1905, I, Druggist, Lufkin.

GLEASON, B., 1906, V, Postmaster, Hico.
GLEASON, H., 1903, IV, Manager Hico Light and Power Co., Hico.
GLOVER, W. F. H., 1898, I, Planter, James Island, S. C.
GOLDBERG, I. L., 1896, II, Merchant, Jefferson.
GONZALES, J. de la M., 1913, IV, Tampico, Tampico, Mexico.
GOODWIN, J. C., 1914, I, Beaumont.
GOODWIN, W. M., 1912, V, Western Electric Co., Cicero, Ill.
GRADY, M. L., 1909, IV, Civil Engineer for Kirby Lumber Co., Houston.
*GRAY, O. H., 1911, V.
GRANAU, H. F., 1907, IV, Merchant, Bellville.
*GRAVES, C. S., 1882, III.
GRAVES, D. R., 1903, III, Signal Maintainer, T. & P. Ry., 314 S. Jennings Ave., Fort Worth.
GRAY, J. L., 1884, III, Civil Engineer.
GREEN, C. E., 1912, V, General Electric Co., Schenectady, N. Y.
GREEN, ROY, 1914, I, Floydada.
*GREEN, R. B., 1884, III.
*GREENWOOD, F. J., 1898, IV.
GRIESENBECK, C. H., 1912, VII, Architect, 1101 S. W. Life Bldg., Dallas.
GRIFFITHS, T. W., Jr., 1900, III, with Griffiths & Co., Lumber Dealers, Dallas.
GRISSOM, R. J., 1913, IV, Professor of Mathematics B. B. A., Bryan.
GROGINSKI, P., 1914, V, Bryan.
GROTE, F. H., 1911, I, Taft.
GRUENE, E., 1887, III, Piano Dealer, New Braunfels.
GRUPE, G., 1892, III, Superintendent L. & P. Plant, Cleburne.
*GUGENHEIM, L. Z., Jr., 1906, V, E. E., 1907.
GURLEY, D. R., Jr., 1892, Farmer, Waco.
HACKNEY, J. G., 1906, III, Merchant, Stamford.
HAILE, C. R., 1912, IV, San Antonio.
HADEN, J. H., 1879, Farmer and Stockman, R. F. D. No. 2, Barry.
HALL, G. G., 1913, I, Houston.
HALTOM, G. T., 1906, V, Signal Supervisor, Waco.
HANER, E., 1904, IV, Division Engineer Natl. R. R. of Mexico, Gomez Palacios, Mexico.
HANNA, HOWARD E., 1905, I, Traveling Salesman Hughes-Percell Paint Co., Kansas City, Mo.
HANSCHKE, R., Jr., 1890, III, Manager Advertising Department Freie Presse fuer Texas Publishing Co., 225 King William St., San Antonio.
*HARE, H. C., 1887, III.
HARE, S. C., 1882, III, Lawyer, 566 S. Travis St., Sherman.
HARRINGTON, C. B., 1902, I, Physician, Lake Charles, La.
HARRISON, C. C., 1899, II.
HARRISON, E. W., Jr., 1913, I, Farmer, Greenville.
HARRISON, J. C., 1914, III, Stockdale.
HARRISON, J. G., 1902, III, Architect, Wilson Bldg., Dallas.
*HARRISON, W. A., 1898, II.
HARRIS, D. B., 1909, IV, Bank Clerk S. Texas Com. Natl. Bank, Houston.
HAUCK, CHARLES F., 1905, III, Captain Dredge Boat, Galveston.
HAWKINS, J. W., 1893, I, General Land Office, Austin.
HEIDELBERG, H. A., 1903, III, Iola Portland Cement Co., Dallas.
HEFNER, W. J., 1913, V, with General Electric Co., Schenectady, N. Y.
HELDENFELS, C. A., 1903, I, Lumber Dealer and Architect, Beeville.
HELDENFELS, F. W., 1909, VII, Lumber Dealer, Beeville.
HELLER, J. H., 1913, I, Buda.
HELLER, W. L., 1908, I, Wholesale Florist, R. F. D. No. 1, Alvin.
HEMPHILL, G. H., 1912, V, Otis Elevator Co., Houston.
HENDERSON, C. M., 1911, I, Broker, Linz Bldg., Dallas.
HENDERSON, H. W., 1891, I, Cotton Buyer, Ladonia.
HENSEL, F., Jr., 1907, I, Instructor in Horticulture, College Station.
HEREFORD, J. B., 1887, III, General Agent, Fire Insurance, Dallas.
HERNSTADT, S. J., 1890, IV, Member New York Cotton Exchange, 60 Broadway, N. Y.
HERRINGTON, J. J., Jr., 1914, III, Neshoba, Miss.
HIGGINS, W. S., 1907, IV, Roadmaster G., H. & S. A. Ry., Victoria.
HILDEBRANDT, A. M., 1896, II, M. S., 1898, Minister, Sewanee, Tenn.
HILL, JOHN E., Jr., 1904, III, 1905, V, E. E., 1907, Bell Tel. Co., Waco.
HILL, J. R., 1913, IV, care County Engineer, Waco.
HILL, M. J., 1907, V, District Traffic Manager S. W. Tel. and Tel. Co., Marshall.
HILL, S. S., 1914, V, Sandy.
HOEFLE, K. F., 1912, IV, Amalgamator, Unsan, Chosen, Japan.
HOEPFNER, F. W., 1914, I, Houston.
HOFFER, T. B., 1904, IV, Resident Engineer Texas Company, Wichita Falls.
HOFFMAN, F. C., 1888, III, Jeweler, New Braunfels.
HOFMAN, R. W., 1906, IV, Merchant, Mason.
HOHN, CAESAR, 1912, I, M. S., 1914, Yorktown.
HOLCOMB, R. M., 1902, Clerk Auditor's Office, P. E. Ry. Lines, Los Angeles, Cal.
HOLLAND, C. J., 1913, VIII, Brownwood.
HOLLOWAY, T. E., 1908, I, U. S. Department of Agriculture, New Orleans, La.
HOLMAN, J. R., 1895, IV, Chief Engineer Oregon & Washington R. R., Seattle, Wash.
HOLZMAN, F. R., 1902, I, Real Estate, Dallas.
HOLZMAN, WALTER R., 1905, I, Veterinary Inspector, B. A. I., Lubbock.
HOMANN, A. C., 1898, III, Cashier First State Bank, Rowena.
HOMEYER, C. W., Jr., 1908, IV, Engineer Medina Irrigation Co., Lytle.
HOOKER, R. M., 1910, I, Farming, Tyler.
HOOPER, J. J., 1901, I, Professor of Animal Husbandry, Kentucky State College, Lexington, Ky.
HOPKINS, S. H., 1890, I, Attorney, Gonzales.
HORN, T. L., 1899, III, Machinist I. & G. N. Shops, Palestine.
HORTON, C. K., 1909, IV, Civil Engineer for Horton & Horton, Houston.
HOUGH, S. A., 1885, III, County and District Clerk, Rock Springs.
HOUSTON, F. N., 1894, IV, Track Foreman T. & N. O. R. R., Beaumont.

HOWELL, J. W., 1894, I, President and Manager Bryan Cotton Oil Co., Bryan.
HOWELL, R. W., 1896, I, Cashier First National Bank, Bryan.
HOYO, G. A., 1906, I, Government Superintendent and Agriculturist, Calumet, Okla.
HUDGINS, F. D., 1897, IV, General Superintendent Jas. C. Travilla Co., Fort Worth.
HUDGINS, L. A., 1913, VIII, Asst. Chemist, College Station.
HULL, B. E., 1904, IV, Chief Engineer Texas Co., Box 1805, Houston.
HUNT, N. H., 1912, V, Electrical Engineer, Texas City.
HUTCHINSON, E. W., 1889, IV, Secretary-Treasurer Moore-Cortes Canal Co., Houston.
HUTCHINSON, O. D., 1893, I, Farmer and Stockman, Chickasha, Okla.
HUTCHINSON, W. F., 1897, IV, Bank Cashier, Winter Haven, Fla.
HUTH, T. G., 1912, III, Mechanical Engineer, San Antonio.
HUTSON, A. C., 1900, IV, Engineer Natl. Bd. Fire Underwriters, New York City.
HUTSON, H. L., 1896, III, Chief Engineer A. M. Lockett & Co., Ltd., 533 Barron St., New Orleans, La.
HUTSON, W. F., 1895, IV, Assistant Engineer G., H. & S. A. Ry., El Paso.
HUTSON, M. B., 1909, V, Salesman Electric Appliance Co., New Orleans, La.
HYNDS, H. G., 1910, V, Texas City Ter. Co., Texas City.
INGRAM, H. L., 1910, V, Texas Traction Co., Dallas.
IRBY, A. H., 1914, I, Assistant Veterinarian to Experiment Station, College Station.
ISBELL, J. M., 1903, IV, Civil Engineering Department M., K. & T. Ry., Oklahoma City, Okla.
ITZ, F., 1911, IV, Medina Irrigation Co., San Antonio.
*JACK, D. M., 1879.
JACKSON, J. W., 1913, I, Scientific Asst. Sub-Station No. 3, Angleton.
JACOT, H., 1902, Merchant Mining Machinery, Apartado 414, Mexico City.
JAHN, R. S., 1910, IV, Draftsman Sunset-Central Lines, Houston.
JAHN, F. C., 1894, II, Horticulturist, Gonzales.
JAMES, M. H., Jr., 1913, I, Horticulturist, Brazoria.
JAMES, O. J., 1914, I, Monclova, Coah., Mexico.
JAPHET, G., 1894, III, Wholesale Fruit and Produce, 917 Commerce St., Houston.
JAPHET, W. E., 1904, IV, Civil Engineer Producers Oil Co., Houston.
JENNINGS, A. L., 1914, III, Kosse.
JENNINGS, J. W., 1911, I, Farmer, San Antonio.
JENSON, W. M., 1912, I, Ice Cream Mfg. Co., Durant, Okla.
JOBSON, H. H., 1908, I, U. S. Department of Agriculture, College Station.
JOBSON, T. S., 1903, III, Signal Supervisor G. H. & S. A. Ry., Box 553, Del Rio.
JOHN, J. R., 1910, IV, Draftsman Sunset Lines, Houston.
JOHNSON, M. L., 1912, V, Eng. of Con. A. L. & W. Co., Amarillo.
JOHNSON, T. L., 1912, I, Manager Farm, Slidell.
JOHNSTON, L. M., 1913, III, M. E., 1914, Bryan.
JOHNSTON, T. J., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
JONAS, E. C., 1894, IV, Draftsman Resident Engineer's Office, G., H. & S. A. Ry., 1002 Avenue D, San Antonio.
JONAS, H. F., 1888, IV, Bridge Engineer Sunset Lines, Houston.
JONES, H. P., 1913, IV, Kaufman.
JONES, C. E., 1908, I, Bookkeeper First National Bank, Bryan.
JONES, G. M., 1912, I, Medical Student, Galveston.
JONES, L. R., 1908, IV, Engineer Gulf Refining Co., Port Arthur.
*JONES, W. F., 1889, IV.
JONES, W. T., 1914, V, Sinton.
JOPLIN, J. F., 1913, I, Sipe Springs.
JORDAN, G. F., 1914, I, Fredericksburg.
JORDAN, H. P., 1895, IV, Attorney at Law, Waco.
JOSEY, N. L., 1888, I, Merchant, San Antonio.
JOSSERAND, L. P., 1913, VII, Student Columbia University, 2940 Broadway, New York.
JOUINE, G. P. F., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
KAHN, M. S., 1900, II, Physician and Surgeon, Hallettsville.
KELL, E., 1894, III, Mechanical Engineer, 2221 Columbus St., New Orleans, La.
KELLER, J., 1913, V, with Western Elec. Co., Hawthorn, Chicago.
KELLY, C. P., 1913, I, New York City.
KELLY, H. J., 1911, IV, U. S. Engineers, Port Arthur.
KENDRICK, R. T., 1906, I, Ranchman, Dimmit.
KENEDY, O., 1883, III, Life Insurance, Georgetown.
KENNEDY, B. R., 1913, I, Dairy Manager, Falfurrias.
KENNEDY, E. J., 1912, I, Student University of Texas, Austin.
KERR, E. W., 1896, III, M. E., 1899, Professor of Mechanical Engineering Louisiana State University, Baton Rouge, La.
KERR, J. G., 1898, I, Veterinarian, 135 Cypress St., Beaumont.
KIDD, J. W., E. E., 1909, Professor State School of Mines, El Paso.
KILLOUGH, D. T., 1914, I, Galveston.
KINCAID, E. B., 1911, I, San Antonio.
KINSLOE, R. H., 1903, Magnolia Pet. Co., Beaumont.
KIRKPATRICK, L. R., 1906, III, Farmer, McKinney.
KIRSCHNER, I., 1901, IV, Resident Engineer W. F. & N. W. Ry., Leedey, Okla.
KLEINSMITH, M. L., 1901, IV, Resident Engineer, Maricopa, Cal.
KLEUSER, M. C., 1901, VII, Architect, 421 Scarbrough Bldg., Austin.
KLOSS, E. L., 1902, III, Machinist I. & G. N. Shops, San Antonio.
KLOSS, O. H., 1907, IV, Assistant Cashier First National Bank, Bellville.
KNOLLE, A. P., 1888, IV, Physician, Ellinger.
KNOLLE, B. E., 1894, III, Physician, Industry.
KNOLLE, E. R., 1887, III, Physician, Brenham.
KNOLLE, O. J., 1897, I, Physician, Industry.
KNOLLE, W. H., 1888, IV, Physician and Surgeon, 3941 Canal St., New Orleans, La.
KNOX, G. P., 1914, IX, 123 W. Commerce St., San Antonio.
KOINM, C. H., 1913, with Denver Gas and Elec. Co., Denver, Col.
KOONS, J. V., 1911, III, Civil Engineer, El Campo.
KOPKE, L. J., 1880, IV, Civil Engineer and Rice Planter, 1068 Liberty Ave., Beaumont.
KOTZBUE, M. H., 1914, III, Flatonia.
KOWALSKI, B., 1906, IV, with Fred A. Jones Bldg. Co., Dallas.

KRAUSKOPH, E. M., 1911, IV, U. S. Engineer Miss. River Com., Vicksburg, Miss.
KREUGER, C. C., 1912, IV, Salesman S. A. M. and S. Co., San Antonio.
KRAEGE, A. C. A., 1913, V, with General Elec. Co., Schenectady, N. Y.
KROULIK, HUGO J., 1905, Bookkeeper, Taylor.
KUEHNE, J. F., 1889, II, Manufacturing and Commission Agent, Box 5104, Mexico City.
KYLE, A. J., 1897, I, Stockman, Pecos.
KYLE, E. J., 1899, II, Professor of Horticulture and Dean of School of Agriculture, College Station.
*KYLE, H. C., 1896, I.
KYLE, J. A., 1890, I, Physician and Surgeon, Member of Board Directors A. & M. College, Binz Bldg., Houston.
*KYLE, T. M., 1893, III.
LAAKE, E. W., 1913, I, U. S. Dept. of Agriculture, Dallas.
LAMMERS, E. S., Jr., 1913, V, 415 Kelly St., Wilkinsburg, Pa.
LANDA, L. M., 1907, V, Automatic Elec. Co., Dallas.
LANE, G. I., 1914, I, Valley Mills.
LANE, G. J., 1913, I, Valley Mills.
LANGDON, Y. M., 1913, IX, Hutchins.
*LANGDON, W. F., 1911, IV.
LANGFORD, E., 1913, VII, Bertram.
LANGSTON, J. A., 1912, I, Cleburne.
*LAUDERDALE, J. R., 1908, I.
LAUDERDALE, J. C., 1911, IV, Assistant Engineer Bureau of Public Works, Manila, P. I., Home Address, Somerville.
LAW, F. M., 1895, I, Banker, Houston.
*LAWLEY, L. P., 1902, I.
LEAR, J. E., E. E., 1909, Norwich University, Northfield, Vt.
LEARY, EDGAR M., 1905, IV, Civil Engineer, with Mex. & N. W. R. R., Home Address, Alvin.
LEE, D., 1911, IV, Student Cornell University, Ithaca, N. Y.
LEE, H. F., 1909, V, Dallas Tel. Co., Dallas.
LEE, KNOX, 1908, V, Electrical Foreman, Beaumont.
LEGGETT, C. W., 1910, III, Chemist Fidelity Cotton Oil Co., Houston.
LEGGETT, W. W., 1889, IV, Co. "C," 1st Bat. U. S. Engineers, Manila, P. I.
LEHMANN, E. W., 1913, Iowa State College, Ames, Iowa.
LEMPERT, L. H., 1907, V, General Electric Co., Lynn, Mass.
LENERT, A. A., 1914, I, La Grange.
LENERT, L. G., 1906, IV, Resident Engineer T. C. R. R., Rising Star.
LENZ, L., 1907, IV, Draftsman R. of W. Department S. P. R. R., Box 464, Houston.
LEROY, L. F., 1911, III, San Antonio.
LEVY, D. H., 1914, V, Waco.
LEWIS, F., 1894, IV, Farmer, Forney.
LEWIS, J., 1900, I, Veterinary Surgeon, Greenwood, Miss.
LEWIS, L. L., 1893, I, M. S., 1894, Professor of Zoology and Veterinary Science Oklahoma A. & M. College, Stillwater, Okla.
LEWIS, M. G., 1899, III, Locomotive Inspector, Schenectady, N. Y.
LICHTE, F., 1906, VI, Merchant, Cleburne.
LIDIAK, J. P., 1913, III, Westinghouse Machine Co., Pittsburg, Pa.
LIENHARD, L. V., 1913, IV, Cuero.
LILLARD, S. A., 1910, IV, Manager Flour Mill, Decatur.
LILLARD, W. W., 1904, IV, U. S. Eng. Corps, Sabine.
LILLY, R. C., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
LINDEMAN, C. E., 1903, III, Machinist G., C. & S. F. Ry., Cleburne.
LINDEMAN, JAMES E., 1905, III, Draftsman Ft. W. & D. C. R. R., Childress.
LINDLEY, T. L. P., 1912, I, Wortham.
LINDNER, M., 1908, III, Box Manufacturer, San Antonio.
LIPSCOMB, R. S., 1882, III, Physician, Grapevine.
LITTLEJOHN, R. G., 1891, IV, City Assessor and Collector, City Hall, Fort Worth.
LOCHRIDGE, C. F., 1913, I, Iowa Park.
LOCHRIDGE, J. L., 1910, IV, Medina Irrigation Co., Box 1140, San Antonio.
LOCKETT, N., 1903, IV, Engineering Department, care Williamson, Balfour & Co., Taltal, Chile.
LOCKETT, W. R., 1913, I, Cleburne.
LODAL, M. G., 1913, I, Gorman.
LOMANITZ, S., 1908, Chemist, Houston.
LOONEY, L. P., 1910, I, Farmer, R. F. D. No. 1, Commerce.
LORENZ, J. H., 1913, III, Stockdale.
LOUWIEN, H., 1911, V, Denver Gas and Electric Co., Denver, Col.
LOVE, A. C., 1899, IV, Associate Professor of Civil Engineering, A. & M. College, College Station.
LOVING, J. W., 1906, I, Ranchman, Jermyn.
LOWN, F. D., 1913, I, Thornton.
LUCKETT, W. H., 1891, I, Physician and Surgeon, 112 W. 119th St., New York, N. Y.
*LUCKETT, W. M., 1894, III.
*LUHRSEN, C. W., 1900, IV.
LYLES, J. V., 1913, IV, Blue Grove.
McADAMS, E. E., 1911, IV, Instructor in Physics, College Station.
McANELLY, E. E., 1911, VII, Architect, 1201 S. W. Life Bldg., Dallas.
McCALL, H. S., 1903, IV, McCall-Moore Eng. Co., Waco.
McCONNELL, J. P., 1911, IV, M., K. & T. Ry., Oklahoma City, Okla.
McCONNICO, S. F., 1901, I, Fire Insurance Inspector, Praetorian Bldg., Dallas.
McCORMICK, GEO., Jr., 1891, III, Assistant Superintendent G., H. & S. A. Ry., El Paso.
McCOWN, J. W., 1910, I, Whitney.
McCULLOUGH, C. C., 1886, C. E., 1890, Surgeon U. S. Army, Manila, P. I.
McCULLOUGH, R. E., 1912, IV, Houston.
McDANIEL, A. A., 1909, I, Physician, Gibbs Bldg., San Antonio.
McDONALD, J. M., 1913, V, Ozona.
McDONALD, W. A., 1910, V, Houston.
McDONALD, H. F., 1895, III, Draftsman General Land Office, Austin.

McDONALD, W. H., 1902, I, Farmer, Athens.
McDOWELL, C. H., 1912, I, Farmer, Corpus Christi.
McDOWELL, J. C., 1914, I, Trinity.
McEACHERN, C. A., 1912, I, Merchant, Route 1, Austin.
McELROY, T. E., 1908, I, U. S. Department of Agriculture, Stillwater, Okla.
McFARLAND, ARTHUR, 1905, III, U. S. Engineering Corps, Port Arthur.
McFARLAND, J. L., 1912, V, with General Electric Co., Schenectady, N. Y.
McGINNIS, F. K., 1900, II, Horticulturist, Dallas.
McGINNIS, N. M., 1908, I, Instructor College of Industrial Arts, Denton.
McGINNIS, P. T., 1914, I, Terrell.
McGRAW, M., 1911, III, Merchant, Dallas.
McGREGOR, F., 1903, IV, Contractor, Houston.
McILHENNY, J. L., 1910, IV, Natl. Steel Rail Co., 227 Woodlawn Ave., San Antonio.
McKAY, C., 1910, V, 500 Kelly St., Wilkinsburg, Pa.
McKAY, G., 1910, V, Longview.
McKAY, G., 1903, III, Longview Iron Works, Longview.
McKNIGHT, O. J., 1903, IV, Cashier Dalhart Bank, Dalhart.
McLAVY, R. B., 1903, III, Bastrop.
McLENNAN, LAMAR, 1905, I, State Feed Inspector, Oklahoma City, Okla.
McLEOD, J. H., 1908, I, Student University of Wisconsin, Madison, Wis.
McMAHAN, L., 1911, V, Merchant, Waco.
McMILLAN, F. N., 1912, I, Calvert.
McMILLAN, L. B., 1911, III, 1912, M. E., 1913, Ch. E., Instructor in M. E., Madison, Wis.
McMILLAN, M. R., 1895, III, 1913, B. S., Physician and Surgeon, Health Dept., New York.
McMILLAN, S. A., 1909, I, Asst. Professor in Agronomy A. & M. College, College Station.
MacNAIR, H. J., 1887, III, 239 W. 39th St., New York City.
McNEIL, J. C., 1896, IV, Ranchman, Spur.
McQUEEN, T. B., 1884, III, Accountant, Marlin.
MABRY, R., 1889, IV, 806 Cherry St., Fort Worth.
MACKENSEN, B. C., 1884, III.
MACKENSEN, L., 1885, III, Farmer, Houston.
MAEDGEN, C. E., 1904, I, Banker, Temple.
MANGUM, R. L., 1912, V, Unsan, Korea.
MANSFIELD, B. J., 1912, VII, Architect and Business Manager, J. B. Clarkson Farms, Robstown.
MANSFIELD, H. R., 1903, IV, Eng. Dept. N. Y. C. & H. R. R., Room 3016, G. C. Station, New York City.
MARBACH, A., 1907, IV, Instrumentman for S. L. Clark, Cotulla.
MARBURGER, BERNARD, 1905, IV, Roadmaster H. & T. C., Ennis.
MAREK, E. L., 1907, IV, Draftsman, Pleasanton.
MARKHAM, E. L., 1902, IV, Assistant Engineer St. L. S. W. Ry., Pine Bluff, Ark.
MARKS, S. H., 1911, VI, Stockman, Mason.
MARTIN, E. L., 1899, IV, Assistant Superintendent M., L. & T. Ry., Lafayette, La.
MARTIN, H. B., 1895, III, Superintendent for Morey-Faulkhaber Construction Co., Caldwell.
MARTIN, C. H., 1911, I, Stock Farmer, Mason.
MARTIN, S. H., 1911, I, Rancher, Mason.
MARTIN, S. P., 1912, V, Bryan.
*MARTIN, W. C., 1898, II, M. S., 1901.
MASSENBERG, W. G., 1894, IV, Division Engineer G. C. & S. F. Ry., Beaumont.
MATTHEWS, H. F., 1903, IV, Contractor, San Antonio.
MAXWELL, J. W., 1904, III, Manager Copper Mines, Panulcillo, Cocuimbo, Chile.
MAXWELL, N. C., 1907, IV, Bookkeeper, Hamilton.
MAYER, M. F., 1906, VII, Architect, San Antonio.
MAYERS, H. P., 1914, IV, San Antonio.
MEAD, J., 1897, IV, Resident Engineer, St. L., B. & M. Ry., Bay City.
MEECE, B. L., 1912, V. D. C. Mining Co., Unsan, Korea.
MEEK, R. W., 1904, III, Foreman T. & N. O. Signal Shops, Houston.
MELTON, W. B., 1914, I, Fletcher, N. C.
MENKE, C. H., 1910, Stockman, Hempstead.
MERIWETHER, W. T., 1891, IV, Tampico, Mexico.
*MERRETT, W. B., 1889, I.
METCALFE, J. D., 1906, IV, Eng. Brazos River Protection, Pitts Bridge.
METCALFE, T. P., 1911, I, Post Graduate Student University of Missouri, Columbia, Mo.
*MIDDLEBROOK, E. S., 1889, IV.
MIDDLEBROOK, R. M., 1891, III, Sales Manager, Gibbs Bldg., San Antonio.
MIKESKA, H. J., 1910, IV, with Santa Fe, Davis, Okla.
MILEY, J. H., 1896, IV, Special Asst. to Attorney General of U. S., Wewoka, Okla.
MILLER, A. C., 1914, I, New Ulm.
MILLER, C. S., 1880, President Ballinger State Bank and Trust Co., Ballinger.
MILLER, E. A., 1908, I, Assistant State Horticulturist and Plant Pathologist, Austin.
MILLER, H. J., 1883, Banker, Bellville.
MILLER, J. D., 1912, IV, Municipal Eng., Winnsboro.
MILLER, M. J., 1911, IV, Fire Insurance Inspector, Fort Worth.
MILLER, R. F., 1909, I, Assistant A. & M. College of Montana, Bozeman, Mont.
MILLER, R. H., 1913, V, with General Elec. Co., Schenectady, N. Y.
MILLER, R. S., 1913, I, San Saba.
MILLER, V. W., 1914, V, Springtown.
MILLER, W. Z., 1913, I, Farm Manager, D. W. Glasscock, Mission.
MILLICAN, WAYNE, 1907, I, Stock Farmer, Richland.
MINEAR, SYLVESTER A., 1905, I, County Farm Demonstrator, Fort Stockton.
MINTER, C. J., 1909, I, Bank Clerk, Fort Worth.
MISTROT, G. A., JR., IV, Houston.
MITCHELL, A., 1894, IV, Professor of Drawing, College Station.
MITCHELL, W. H., 1894, IV, Druggist, Holland.
MITCHELL, A. F., 1909, IV, Civil Engineer, Eagle Lake.
MITTMAN, E. F., 1902, IV, Draftsman Ft. W. & D. C. R. R., Fort Worth.
MOH, H. Y., M. S. in Agr., 1914, Shanghai, China.

MONROE, J. S., 1900, IV, Assistant Engineer Mexican Central Ry., Mexico City.
MONTEMAYOR, R. R., 1911, I. C., Jaumune, Tampico, Mexico.
MONTGOMERY, F. L., 1889, I, Lawyer, Muskogee, Okla.
MONTGOMERY, F. L., 1913, IV, Corsicana.
MOORE, C. B., 1911, I, Stock Farmer, Van Alstyne.
MOORE, F., 1902, I, Teacher, 410 W. Second St., Fort Worth.
MOORE, G. F., 1908, IV, 1st Lieutenant U. S. Army, Fort Worden, Wash.
*MOORE, G. G., 1903, IV.
MOORE, J. M., 1913, M. S., Fayette, Ala.
MOORE, R., 1892, I, Druggist, Tilden.
MOORE, T. E., 1892, I, Secretary and Auditor Eureka Tel. Co., San Antonio.
MOORE, W. G., 1907, V, Manager Texas Power and Light Co., Paris.
MOORE, W. M., 1895, IV, President and General Manager, L. G. & R. M. Mining Co., S. W. Life Bldg., Dallas.
MOORE, W. S., 1911, I, Stock Farmer, Yoakum.
MORLEY, M. D., 1912, III.
MORRILL, C. R., 1891, IV, Assistant Superintendent G. H. & S. A. R. R., El Paso.
MORRIS, C. C., 1911, I, Farmer, R. F. D., No. 4, Henderson.
MORTON, O. L., 1911, III, Draftsman, Dallas.
MOSELEY, HAL, 1901, IV, Insurance Inspector, Box 309, Dallas.
*MOSELEY, W. E., 1883, III.
MOSER, C. OTTO, 1904, I, President North Texas Creamery Co., Dallas.
MOSER, E. F., 1912, I, Poultry Raiser, 1519 Ross Ave., Dallas.
MOURSUND, A. F., 1895, IV, Assistant Superintendent G., V. G. & N. R. R., Globe.
MOURSUND, E. M., 1897, IV, Resident Engineer H. & T. C. R. R., Ennis.
MOUSER, E. B., 1895, I, Physician, Electra.
MULLINS, E. Y., 1879, President Southern Baptist Theological Seminary, Louisville, Ky.
MUNSON, T. A., 1910, IV, Civil Engineer, Angleton.
MUNSON, A., 1908, V, Civil Engineer, Angleton.
MUNSON, H. W., 1909, V, Houston.
MYERS, A. L., 1907, V, Mfg. Agent, 111 New Montgomery St., San Francisco, Cal.
MYERS, O. W., 1900, III, 406 Austin St., Palestine.
MYERS, W. G., 1894, III, Mining, Parral, Mexico.
NAGLE, J. M., 1911, IV, Engineer Ft. Worth-Denton Traction Co., 902 State National Bank Bldg., Fort Worth.
NAVE, G. F., 1912, III, Clerk, S. A. & A. P. Ry., Kenedy.
NEALE, R. B., 1908, I, Stock Farmer, Archer City.
NEATHERY, D. E., 1892, I, Merchant, Farmersville.
NEFF, A. J., 1903, III, 1913, M. E., Consulting Engineer, 3111 Cole Ave., Dallas.
NEIGHBORS, A. H., 1911, VII, Medical Student, University of Texas, Galveston.
NESS, H., 1889, II, Horticulturist Experiment Station, College Station.
NETHERWOOD, D. B., 1908, III, 2nd Lieutenant Coast Artillery, San Diego, Cal.
NETHERWOOD, J. S., 1911, III, Draftsman Sunset-Central, Houston.
NEWELL, G., 1910, V, Westinghouse E. and M. Co., Houston.
NEWTON, G., 1898, I, Merchant, Thorndale.
NEWTON, J. W., 1912, VIII, Chemist, Beaumont.
NICHOLS, J. F., 1898, II, Attorney at Law, Greenville.
NICHOLS, J. R., 1889, I, Oculist, State Institutions, Austin.
NICHOLS, W. L., 1891, IV, Real Estate, Wilson, Bldg., Dallas.
NOLTE, R. W., 1913, V, New Orleans, La.
NORTH, W. G., 1908, I, Farmer, Yoakum.
NUGENT, C. W., 1913, VI, Conroe.
NUSSBAUM, J. H., 1913, III, Allis-Chalmers, West Allis, Wis.
O'BAR, J. H., 1893, I, Cotton Buyer, Coleman.
O'CONNOR, D., 1913, I, Laredo.
O'CONOR, T., 1910, V, 515 Soledad St., San Antonio.
OGLESBY, G. B., 1894, IV, Farming, Gordonville.
OHLENDORF, W., 1913, I, Lockhart.
OLDS, T. H., 1902, IV, Sao Paulo Light and Power Co., Sao Paulo, Brazil.
OLIPHANT, J. W., 1903, IV, Civil Engineer, with S. Gibbs, Huntsville.
OLIPHANT, L. N., 1913, IV, Rice.
OLIVER, C., 1913, I, Lampasas.
OLSON, J. N., 1913, IV, Galveston.
ORTH, W. A., 1913, VII, Merchant, Yoakum.
ORR, W. R., 1906, IV, Grocer, Llano.
ORTIZ, J. A., 1892, IV, Stockman, 915 Zaragossi St., Laredo.
OVERSHINER, E. M., 1897, IV, County Judge, Abilene.
PAPE, G. H., 1904, IV, Cotton Agent, Wilson Bldg., Dallas.
*PARK, C. M., 1896, IV.
PARKER, EARL, 1914, V, Carthage.
PARKS, L. D., 1911, IV, Civil Engineer Frisco R. R., 589 St. Louis Ave., Springfield, Mo.
PARR, V. V., 1914, I, Waelder.
PARSONS, B. C., 1893, II, Deputy Collector of Customs, Terlingua.
PATRICK, A. T., 1883, III.
PARTRIDGE, R. C., 1912, III, Farming, Munday.
PATTERSON, J. C., 1912, I, Farmer, Goodnight.
PEARCE, R. B., 1911, IV, Potts-Moore Gravel Co., Waco.
PEARSON, H. A., 1893, IV, Farmer, Troy.
PEDEN, L. T., 1904, IV, Dewson & Fletcher, Houston.
PENDLETON, DAVID E., 1905, IV, Assistant Engineer M., K. & T. Ry., Trinity.
PENNER, W. A., 1906, V, Corsicana Light Co., Corsicana.
PENNINGTON, R. E., 1884, I, Lawyer, Brenham.
*PERLITZ, W. E., 1893, IV.
PESCAY, C. H., 1885, III, Special Agent, 911 Hennen Bldg., New Orleans, La.
PETER, L. S., 1911, V, Westinghouse Electric Co., Wilkinsburg, Pa.
PETERSON, J. A., 1914, III, Louise.
PETERS, R. F., 1894, III, Chief Draftsman S. A. & A. P. Ry., San Antonio.

PFEUFFER, F. L., 1885, III, Real Estate Colonizing, Omaja, Cuba.
*PFEUFFER, W. O. R., 1888, I.
PFEUFFER, U. S., 1891, IV, Lumber Merchant, New Braunfels.
PHILLIPS, F. R., 1914, II, Denton.
PHILPOTT, W. B., 1884, III, M. S., 1890, care D. M. Derden, Amarillo.
PICKENS, D. B., 1914, V, Wallis.
PICKETT, G., 1911, III, Medina Irrigation Co., Home Address, Karnes City.
PIRIE, J. E., 1904, with Street & Born, Contractors, Houston.
PIRIE, J. H., 1906, V, 1st Lieutenant Coast Artillery U. S. Army, Fort Warren, Mass.
PITTUCK, B. C., 1894, I, Division College Extension, A. & M. College, Stillwater, Okla.
POLANSKY, T., 1909, IV, Postgraduate Student Columbia University, New York.
POLK, W. A., JR., 1895, IV, Wholesale Grocer, Dallas.
POOL, H. M., 1911, IV, U. S. Army, Texas City.
POTTHAST, A. H., 1911, IV, Medical Student University of Texas, Galveston.
POTTS, A. T., 1907, I, Assistant Professor of Horticulture, College Station.
POTTS, R. J., 1906, IV, C. E., 1907, Potts-Moore Gravel Co., Waco.
*POULTER, R. J., 1899, II.
POWELL, L. H., 1914, IV, Baird.
PRICE, W. A., 1905, I, Farmer, Reagan.
PROCTER, J. H., 1910, V, 1913, E. E., Westinghouse Elec. Co., Pittsburg, Pa.
PUCKETT, D. M., 1911, IV, Engineer, Los Andes, Chile, S. A.
PUCKETT, F. S., 1907, I, care N. C. Dept. of Agriculture, Raleigh, N. C.
PUCKETT, J. W., 1904, IV, Civil Engineer, Los Andes, Chile, S. A.
RADFORD, J. S., 1890, II, Manager Oriental Textile Mills, Houston.
RAGSDALE, J. W., 1890, I, Lawyer, Hallettsville.
RAMSAY, J. W., 1906, V, Instructor in Electrical Engineering, University of Texas, Austin.
RATCHFORD, W. P., 1892, III, County Surveyor, Del Rio.
RATHER, J. B., 1907, I, M. S., 1911, Assistant State Chemist, College Station.
RAWLINS, H. E., 1898, III, Superintendent Quarries Supply Co., Campo Florida, Cuba.
RAY, S. H., 1911, I, Graduate Student University of Illinois.
READING, R. S., 1910, V, Otis Elevator Co., Houston.
REED, W. N., 1914, I, Sterling City.
REESE, G. W., 1907, IV, Bosque-Wensley Lead Co., Denver, Col.
*REICHARDT, F. A., 1879.
RENNERT, F., 1888, I, Commission Merchant, Rennert-Millette Co., San Antonio.
*RHODES, S. E., 1896, III.
RHOME, R. J., 1901, Attorney at Law, Fort Worth.
RICE, D., 1882, III, Public Weigher, 1107 Lamar St., Houston.
RICE, E. R., 1902, III, Gen. Manager of Efficiency Eng. Co., Bisbee, Ariz.
RICH, L. G., 1914, I, Forest.
RIDENHOWER, R., 1903, IV, Hico.
RIDENOUR, C. A., 1909, IV, U. S. Engineer's Office, Dallas.
RIFE, A. J., 1909, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
RIKE, H. M., 1893, IV, Abstracter, Haskell.
RILEY, A. A., 1909, IV, Assistant Engineer T. & N. O. R. R. Co., Y. M. C. A. Bldg., Houston.
RISIEN, G. W., 1903, IV, Draftsman N. Y. C. & H. R. Ry., 5 W. 129th St., New York City.
*ROACH, G. W., 1884, III.
*ROBBINS, A. J., 1911, III.
ROBERTS, C. A., 1913, I, Beaumont.
ROBERTS, F. A., 1913, IV, Austin.
*ROBERTSON, D. K., 1902, III.
ROBERTSON, R. L., 1909, I, Ranchman, Waelder.
ROBINSON, E. R., 1908, I, Ranchman, Dalhart.
ROBINSON, G. W., 1911, V, Brush Elec. Co., Galveston.
ROBSON, C. G., 1898, II, President Southern Tel. Co., La Grange.
RODRIGUEZ, D., 1896, IV, Civil Engineer and Planter, 114 Zaraona St., C. Porfirio Diaz, Mexico.
ROGAN, CHAS., 1879, Lawyer, Asutin.
ROGERS, B. F., 1889, IV, Banker, Jefferson.
ROGERS, C. P., 1900, II, Attorney at Law, Austin.
*ROGERS, G. A., 1887, III.
ROGERS, R. A., 1878, Cotton Factor and Commission Merchant, Galveston.
ROLLINS, A. P., 1906, IV, Asst. Eng. Medina Valley Irrig. Co., Natalia.
ROLLINS, C. W., 1894, IV, Civil Engineer Neches Canal Co., China.
ROLLINS, H. M., 1897, III, Foreman Gulfport Creosoting Works, Gulfport, Miss.
ROLLINS, J. G., 1913, IV, care County Engineer, Waco.
ROLLINS, M. E., 1914, III, Merit.
ROMBERG, C. B., 1912, III, Erecting Engineer Frick Co., Dallas.
ROSA, R. R., 1912, I.
ROSE, W. F., 1894, III, Wholesale Plumbing and Heating Supplies, San Antonio.
ROSEBOROUGH, W. D., 1909, IV, Civil Engineer, Dallas.
VON ROSENBERG, H. C., 1913, V, Hallettsville.
VON ROSENBERG, H. J., 1912, VII, Student Massachusetts Institute Tech., Boston, Mass.
ROSENTHAL, H. H., 1896, IV, Secretary and Treasurer J. J. Segal Co., Jefferson.
ROSS, F. R., 1894, I, Physician and Surgeon, Houston.
ROSS, J. G., 1894, IV, Attorney at Law, Cold Springs.
ROSS, J. L., 1902, IV.
ROSS, R., 1902, IV, care County Engineer, Waco.
ROUNTREE, T. D., 1898, IV, Physician, Lake Creek.
ROWELL, T. D., 1885, I, Attorney at Law, Jefferson.
RUBENKOENIG, H., 1904, III, Professor of Mechanical Drawing State Manual Training Normal, Pittsburg, Kan.
RUDASILL, W. S., 1890, IV, Real Estate Dealer, Box 94, Sherman.
RUDLOFF, E. W., 1911, V, Otis Elevator Co., Houston.
RUDOLF, R. F., 1911, IV, U. S. Engineer, Box 404, Vicksburg, Miss.
RUNGE, J. F., 1914, I, Galveston.
RUST, W. M., Jr., III, Signal Department, Seguin.

SAMMONS, THOMAS B., 1905, Hardware and Saddlery, Mission.
SAMPSON, W. E., 1908, IV, Assistant City Engineer, Beaumont.
SAMUCH, L., 1902, IV, Merchant, Hallettsville.
SANDERS, P. L., 1903, IV, Controller Galvez Hotel, Galveston.
SANDERS, W. O., 1896, II, Manager Parker Lumber Co., Bryan.
SANFORD, C. E., 1911, IV, with Cory, Harrison & Co., San Antonio.
SAUVIGNET, E. H., 1892, I, Physician, Laredo.
SAWYER, R., 1882, III, Breeder of High Grade Hereford Cattle, Clarendon.
SAYERS, A. F., 1913, IV, Houston.
SCARBOROUGH, JOHN, 1912, IV, Mining Eng. Unsan, Chosen, Japan.
SCHADT, C. A., 1907, V, Merchant, 27th St. and Ave. H, Galveston.
SCHAEFFER, R. E., 1908, III, Hardware Business, Schulenburg.
SCHAEDEL, C. T., 1912, IV, San Benito Drainage Co., San Benito.
SCHAEFER, S. E., 1914, III, Waco.
SCHAWE, W. A., 1907, I, Hardware Merchant, Bowie.
SCHERER, C. L., 1896, IV, City Engineer, Beaumont.
SCHERER, W. A., 1898, II, Stockman, Anahuac.
SCHILLER, R. E., 1906, IV, C. E., 1908, U. S. Engineer, Dallas.
SCHLEY, C. C., 1910, V, Salesman W. E. Co., Dallas.
SCHLOM, C. L., 1912, IV, Gulf Pipe Line Co., Houston.
SCHMIDT, C. L., 1890, III, Pierce-Fordyce Oil Association, Laredo.
*SCHMIDT, D. T. C., 1894, IV.
SCHMIDT, F. H., 1914, IV, Kingsbury.
SCHMIDT, H., 1908, I, Veterinarian Experiment Station, College Station.
SCHOLL, E., 1907, I, State Entomologist, Department of Agriculture, Austin.
SCHROEDER, E. A., 1911, VII, Draftsman, College Station.
SCHROEDER, ERWIN F., 1905, I, House Surgeon Boston Veterinary Hospital, 549 Albany St., Boston, Mass.
SCHROETER, H., 1907, IV, Inspector A., T. & S. F. Ry., Kerckhoff Bldg., Los Angeles, Cal.
SCHROETER, A., 1909, IV, Draftsman, 2119 Ave. I, Galveston.
SCHROETER, R. R., 1913, IV, Engineer, Cypress Mill.
SCHUMACHER, H. C., 1892, IV, Wholesale Grocer, Houston.
SCHUWIRTH, W. C., 1914, V, San Antonio.
SCHWAB, L. C., 1911, III, Cuero.
SCOFIELD, J. A., 1913, I, Hillsboro.
SCOTT, F. L., 1914, III, Waco.
SEWARD, O., 1907, IV, Office Engineer Gulf Pipe Line Co., Beaumont.
SEWELL, M. S., 1894, IV, Merchant, McGregor.
SHANKLIN, R. W., 1906, IV, Civil Engineer for Mexico & N. W. R. R., Nuevo Casas Grandes, Cia., Mexico.
SHEARER, D. M., 1909, IV, U. S. Engineer, Greenville, Miss.
SHEARER, T. R., 1912, I, Secretary New Era Gravel and Drainage Co., Houston.
SHERRARD, R. G., 1910, V, 2nd Lieutenant U. S. Army, Fort Liscum, Alaska.
SHERRILL, O. W., 1910, I, Farmer, Kerens.
SHIELS, R. T., 1910, V, General Electric Co., Chicago, Ill.
*SHIRES, F. N., 1897, III.
SHIRES, G. M., 1897, III, City Boiler and Elevator Inspector, City Hall, Houston.
SHIRLEY, A. L., 1884, I, Farmer and Merchant, Anna.
*SHIRLEY, M. W., 1889, III.
SHIRLEY, W. M., 1889, IV, County Treasurer, Collin County, McKinney.
*SHIRLEY, Z. M., 1888, III.
SHORT, A. K., 1900, I, Superintendent of Experiment Station, Temple.
SHORT, J. L., 1893, I, Physician and Surgeon, 300-301 Kiam Bldg., Houston.
SHROPSHIRE, L. O., 1912, V, Plainview.
*SIGEL, R. C., 1909, III.
SIMON, R. B., 1913, V, with Western Elec. Co., Hawthorn, Chicago.
SIMPSON, J. H., 1901, IV, Deck Officer U. S. Bache Fijardo, Porto Rico.
SIMPSON, J. N., 1914, I, Aledo.
SIMPSON, O. M., 1900, IV, Hardware, Callehan & Simpson, Jacksboro.
SIMPSON, S. H., 1909, IV, Cashier Simpson Bank, Columbus.
SINGLETARY, J. N., 1910, I, Instructor in Science, Longview High School, Longview.
SKAGGS, G. E., 1908, V, Assistant Engineer Bell Tel. Co., St. Louis, Mo.
SKEELER, F. J., 1910, V, Instructor in Physics, College Station.
SLAY, S. H., 1914, III, Frost.
SLEEPER, W. M., 1879, III, Lawyer, 714 N. 12th St., Waco.
*SLOSS, A. M., 1899, I.
SMITH, A. J., 1908, I, Farmer, Port Sullivan.
SMITH, A. U., 1895, III, Texas Blueprint Co., Dallas.
SMITH, E. J., 1888, I, Attorney at Law, Denison.
SMITH, E. W., 1910, IV, Denison.
SMITH, G. A., 1909, V, Bermuda.
SMITH, T. L., Jr., 1898, IV, Civil Engineer and Surveyor, Eagle Lake.
SMITH, T. M., 1901, I, Bookkeeper, Columbia.
SMITHER, R., 1894, III, Merchant, Duke.
*SMYTHE, H. G., 1879.
SNEARLEY, C. L., 1911, V, Electrician Automatic Elec. Co., Chicago, Ill.
SNEED, G. L., 1898, I, Minister, Station A, Dallas.
SNIDER, J. B., 1914, I, Walnut Springs.
SOLES, C. B., 1899, III, Machinist I. & G. N. Shops, Palestine.
SORY, E. G., 1912, IV, Draftsman M., K. & T. Ry., Dallas.
SOUTHER, S. C., 1912, I, Farmer, Rosebud.
*SPANN, E. W., 1885, III.
SPARKMAN, F. A., 1914, I, Sterling City.
SPEER, R. H., 1894, IV, Stockman, Quanah.
SPENCE, E. V., 1911, IV, Medina Irrigation Co., Rio Medina.
SPENCE, T. R., 1913, IV, Assistant County Engineer, Waco.
SPENCER, T. C., 1914, IV, Athens.

SPENCER, W. W., 1911, III, Clerk Commonwealth National Bank, Dallas.
SPIVEY, M. C., 1908, IV, Civil Engineer, care City Engineer, Houston.
STALLCUP, J. F., 1904, IV, with H. & T. C., 1513 Wash. Ave., Houston.
STALLINGS, J. H., 1914, I, Bryan.
STANDIFER, R. H., 1908, IV, City Engineering Department, Fort Worth.
STAPP, W. E., 1904, IV, Conroe.
STELZIG, E. H., 1914, I, Fayettville.
STERNBERG, E. H., 1897, IV, County Superintendent of Public Instruction, Bellville.
STERNENBERG, PAUL, 1905, III, Superintendent Steel Works, 2228 Chapel St., Berkeley, Cal.
STERNS, J. B., 1903, Civil Engineer Nona Mills Co., Leesville, La.
STEVENS, D. T., 1913, I, Bryan.
STEVENS, R. R., 1910, IV, Engineer C., M. & S. P. Ry., Minneapolis, Minn., Home Address, Clarendon.
STEWARD, W. W., 1888, III, Civil Engineer for Freestone Co., Steward's Mill.
STEWART, J. E., 1912, IV, Civil Engineer, Corpus Christi.
STIMSON, O. E., 1910, IV, Houston.
STINSON, V. L., 1904, IV, Civil Engineer and County Surveyor, Durant, Okla.
STONE, J. M., 1913, I, Houston.
STREET, GUS C., Jr., 1905, I, Contractor, Houston.
STRIEBER, C. A., 1902, III, Machinist I. & G. N. Shops, 215 Trinity St., Palestine.
STROUD, M. L., 1914, I, Kaufman.
STUBBS, VAN HOOK, 1905, I, Banker, Wortham.
SVASTA, S. F., 1910, V, Telephone Engineer, 400 E. 6th St., Chicago, Ill.
SWAIN, M. S., 1888, II, Houston.
TABER, R. G., 1910, IV, Engineer S. & W. E. Co., Dallas.
TABOR, J. R., 1906, VII, Architect, Houston.
TALBOT, A., 1882, III, Planter, Calvert.
TANNER, E. L., 1914, I, San Antonio.
TARVER, T. C., Jr., 1904, IV, Civil Engineer, 816 Clement St., Houston.
TAYLOR, A. B., 1913, I, Burnet.
TAYLOR, L. T., 1912, IV, Rodman G., C. & S. F. Ry. Co., Crawford.
TAYLOR, M., 1911, V, Eng. S. W. Tel. and Tel. Co., Fort Worth.
TELFAIR, W. H., 1909, V, Ennis.
TEMPLETON, B. O., 1912, V, Western Elec. Co., Cicero, Ill.
TERRY, L. H., 1911, VIII, Chemist Oklahoma Cotton Oil Co., Oklahoma City, Okla.
THALMANN, C. H., 1911, III, Ranch Manager, Bandera.
THANHEISER, C. A., 1901, IV, Engineer M. of W., M., K. & T. Lines, Dallas.
THANHEISER, L. O., 1911, V, San Antonio Gas and Electric Co., San Antonio.
THARP, P., 1910, IV, Attorney at Law, Stewart Bldg., Houston.
THAXTON, HAROLD, 1912, I, Mason.
THOMAS, J. B., 1911, III, Dallas Elec. Co., Dallas.
THOMAS, M. F., 1901, III, Instructor and Graduate Student Cornell University, Ithaca, N. Y.
THOMPSON, C. B., 1907, III, Milling Engineer, 917 S. Alamedo St., Los Angeles, Cal.
THOMPSON, T. E., 1910, IV, Medina Irrigation Co., Lytle.
THOMSON, J. M., 1913, I, Florence.
THROWER, J. D., 1900, I, U. S. Department of Agriculture, Kansas City, Mo.
TIGNER, J. B., 1913, VI, Duke.
TILSON, M. D., 1886, III, Manufacturer and Merchant, Texarkana.
TILSON, P. S., 1888, I, M. S., 1894, Director Houston Laboratories, 215 1-2 Main St., Houston.
TILSON, W. H., 1903, IV, City Engineer, Plainview.
TINKER, E. B., 1914, IV, Brandon.
TODD, A. M., 1894, IV, U. S. Assistant Engineer, P. O. Box 404, Vicksburg, Miss.
TODD, CHAS. C., 1897, II, Attorney at Law, San Antonio.
TODD, D. H. B., 1911, V, Commandant C. M. A., Whitewright.
TOLBERT, W. S., 1913, I, Miami.
TORRENCE, W. C., 1913, III, Waco.
TRACY, H. H., IV, Hardware, Tulia.
TREADAWAY, S. J., 1907, IV, R. R. Cons. Works, El Granada, Cal.
TRENCKMANN, R., 1907, III, Fairbanks, Morse & Co., Beloit, Wis.
TRENCKMANN, W. A., 1878, Newspaper Publisher, Austin.
TRICKEY, W. W., 1911, IV, with C. B. Roulet, Civil Engineer, Dallas.
TRIGG, K. M., 1911, I, Stock Farmer, Bastrop.
TUCKER, D. H., 1913, V, Missouri City.
*TULLER, W. L., 1883, III.
UECKERT, H. H., 1897, IV, Draftsman M. of W. Department, Sunset Route, Houston.
UNDERWOOD, A., 1907, IV, Civil Engineer, Houston.
UNDERWOOD, HARRIS, 1912, IV, Stock Raising, La Porte.
VAN AMBURG, T. A., 1909, IV, with Cotton Belt Ry., Dexter, Mo.
VAN ZANDT, K. M., Jr., 1879, Vice-President and Manager Mercantile Banking Co., No. 12 Avenida, San Francisco, Mexico.
VAN ZANDT, R. L., 1890, IV, National Bank Examiner, Fort Worth.
VICK, JNO. C., 1904, III, Miller, Bryan.
VINTHER, F., 1897, III, Machinist and Draftsman, 602 W. 15th Ave., Pine Bluff, Ark.
VOELCKER, H. R., 1909, VII, Heating and Ventilating Engineer, Kansas City, Mo.
VON ROSENBERG, F. C., 1884, III, Attorney at Law, Austin.
VOSSLER, J. M., 1914, V, Houston.
WALDEN, W. J., 1900, I, M. S., 1903, Attorney at Law, 710 Crawford St., Houston.
WALKER, P. W., 1913, V, Gonzales.
WALKER, R. R., 1911, V, General Electric Co., Pittsfield, Pa.
WALKER, W. T., 1906, VI, Farming, San Saba.
WALLACE, L. W., 1903, III, Instructor in Car and Locomotive Design, Purdue University, West Lafayette, Ind.
WALLIS, J. W., 1909, V, 1st Lieutenant Coast Artillery, Fort Fladger, Wash.
WALLIS, T. T., 1913, I, Cuero.
WALZEM, L. F., 1913, III, New Braunfels.
WANGEMANN, A. E., 1890, I, Wholesale Grocer, Brenham.

WARD, A. L., 1910, I, Manager Oak Knoll Farm, Hagerman.
WARDEN, J. A., 1908, IV, 2nd Lieutenant U. S. Army, Fort Sam Houston, San Antonio.
WARDEN, T. B., 1903, IV, U. S. Engineer's Office, Dallas.
WARREN, C. B., 1914, I, Hewitt.
WASHBURN, H. A., 1906, IV, Draftsman, S. P. R. R., Houston.
WASHBURN, JOHN E., 1905, III, Assistant Master Mechanic National Carbon Co., Cleveland, Ohio.
WASHBURN, W. W., 1908, IV, Bridge Engineer, Houston.
WASHINGTON, W. C., 1912, V, 2nd Lieutenant U. S. Army, Fort Crockett, Galveston.
WATERS, J. J., Jr., 1913, IV, San Antonio.
WATKINS, H. B., 1912, IV, Bowie.
WATKINS, R. C., 1895, IV, Superintendent G., H. & S. A., San Antonio.
WATKINS, W. A., 1892, IV, New Orleans, La.
*WATSON, D. H., 1882, III.
WATSON, W. D., 1893, I, Clerk, Markham.
WEAR, H. A., 1914, IX, Rogers.
WEATHERBY, E. P., 1903, III, Signal Engineer, T. & P. Ry., Dallas.
WEBB, THOMAS C., 1905, IV, 927 Franklin St., Waco.
WEIDEL, J., 1893, IV, Engineer of Construction P. & N. T., Ry., Lubbock.
WEINERT, H. G. H., 1913, I, Geronimo.
WEINERT, M. H., 1909, V, Principal State Juvenile School, Gatesville.
WELBOAN, J. S., 1906, I, Cashier Citizens State Bank, Alvin.
WELBORN, G. M., 1912, V, Palestine.
WELHAUSEN, C. B., 1891, III, Merchant, Shiner.
WELHAUSEN, P. H., 1905, III, Assistant Cashier First National Bank, Shiner.
WELLS, D. D., 1895, I, Physician, 18 San Diego, Acapulco, Mexico.
WENDTLAND, W. A., 1912, III, Merchant, Shiner.
*WESSEN, J. M., 1883, III.
WESSENDORF, J. A., 1907, VI, Bookkeeper and Assistant Manager for J. A. Wessendorf, Richmond.
WEST, T. B., 1887, III, Agent G., H. & S. A. Ry., Columbus.
WHELAN, J. J., 1891, III, Machinist, H. & T. C. Ry., Houston.
WHEAT, G. N., 1897, IV, Rock Springs.
WHEELER, A. C., 1905, I, Ranchman, Sue.
WHISENANT, W. H., 1899, II, Pharmacist, 117 E. Houston St., San Antonio.
WHITAKER, W., 1885, III, Oil Producer, Texarkana.
WHITE, G. R., 1895, IV, Stockman, Brady.
WHITE, T. F., 1913, I, Lott.
WHITENER, H. L., 1891, I, Physician, 2009 E. Grand Ave., St. Louis, Mo.
WHITESIDE, B., 1913, IV, Lott.
WHITFIELD, C. A., 1913, I, San Angelo.
WHITLOCK, E. H., 1886, III, Assistant Factory Manager National Carbon Works, Cleveland, Ohio.
WHITTET, A. B., 1908, III, Ordnance Office, War Department, Washington, D. C.
WHITTET, H. E., 1909, V, Anchorage.
WHITTLE, C. T., 1899, III, Mining, Craig and 18th Sts., Pueblo, Col.
WICKES, H. G., 1912, I, Stockman, Wheelock.
WIGHT, A. T., 1895, IV, General Merchandise, Roxton.
WIGNALL, C. L., 1909, VII, Architect, Port Arthur.
WILLIAMS, I. L., 1903, III, Foreman of Construction Signal Department Sunset Lines, Houston.
WILLIAMS, L. D., 1897, IV, Bookkeeper Austin National Bank, Austin.
WILLIAMS, J. S., 1909, I, Farmer, Benton, Miss.
WILLIAMS, R. S., 1910, V, Eck Dynamo and Motor Co., Newark, N. J.
WILLIAMS, T. S., 1911, III, Draftsman, Milwaukee, Wis., Home Address, Cuero.
WILLIAMSON, H. H., 1911, I, Assistant in Extension Department, College Station.
WILLIFORD, C. L., 1911, III, Draftsman City Engineer's Office, Houston.
WILSON, ASHLEY F., 1905, IV, Instructor Cornell University, Ithaca, N. Y.
WILSON, A. G., 1912, IV, Surveyor, McKinney.
WILSON, W., 1893, IV, Attorney at Law and County Judge, Calhoun County, Port Lavaca.
WINDROW, R. J., 1906, IV, 1913, C. E., County Engineer, Waco.
WINKLER, A., 1900, I, Farmer, The Grove.
WIPPRECHT, W., 1884, I, B. S. A., 1899, Manager of the Bryan Press Co. and Tax Collector Brazos County, Bryan.
WISDOM, F. L., 1896, IV, Bookkeeper for Frost-Johnson Lumber Co., Shreveport, La.
WISE, W. F., 1909, IV, M., L. & T. R. R., Lafayette, La.
WOOD, E. G., 1911, IV, with Texas Bithulithic Co., Waco.
WOOD, W. M., 1888, IV, Assistant Disbursing Officer, I. C. Commission, Empire, Canal Zone.
WOODALL, HOWARD, 1905, III, Clerk P. O. Service, San Marcos.
WOODS, H. A., 1911, IV, Newton.
WOODS, HENRY S., 1905, V, E. E., 1907, Sales Agent General Electric Co., Kansas City, Mo.
WOODWARD, W. F., 1886, III, Banker, Denton.
WORTHING, E. E., 1903, III, Signal Supervisor Sunset-Central Lines, Houston.
WRAY, JAY, 1908, V, Center Point.
WRIGHT, A. A., 1906, I, Stockman, Alfred.
WRIGHT, B. F., 1911, V, Merchant, Waco.
WRIGHT, H. L., 1886, III, Secretary Rio Grande Fire Insurance Co., San Antonio.
WURTZBACH, W. A., 1888, IV, Lawyer, San Antonio.
WYCHE, T. S., 1910, V, Superintendent Hydro. Elec. Station, Victor, Col.
WYSE, IRA O., 1901, I, Dallas.
WYSE, J. T., Jr., 1905, I, Traveling Salesman Texas Oil Co., Greenville.
YAKEY, H. G., 1906, I, Farmer, Taylor.
YARBROUGH, R. W., 1901, III, Merchant and Planter, Red River Parish, Greening, La.
YOUNG, M. H., 1907, VI, Farmer, Primm.
YOUNG, M. H., 1913, I, Montgomery.
YOUNGBLOOD, B., 1902, I, M. S., 1907, Director of Texas Agricultural Experiment Station, College Station.
YOUNGBLOOD, TOM, 1912, I, Demonstration Agent, Belton.

NUMBER OF GRADUATES BY CLASSES.

Class of 1878	2	Class of 1897	27
Class of 1879	23	Class of 1898	23
Class of 1880	7	Class of 1899	22
Class of 1881	1	Class of 1900	26
Class of 1882	12	Class of 1901	19
Class of 1883	8	Class of 1902	27
Class of 1884	14	Class of 1903	36
Class of 1885	10	Class of 1904	36
Class of 1886	11	Class of 1905	39
Class of 1887	10	Class of 1906	46
Class of 1888	17	Class of 1907	45
Class of 1889	19	Class of 1908	49
Class of 1890	14	Class of 1909	47
Class of 1891	16	Class of 1910	69
Class of 1892	25	Class of 1911	98
Class of 1893	15	Class of 1912	98
Class of 1894	31	Class of 1913	114
Class of 1895	27	Class of 1914	71
Class of 1896	22		
			1176
Counted twice			8
Total graduates			1168
Deceased			54
			1114

APPENDIX.

CURRICULA FOR THE CLASSES OF '16, '17, '18.

Course numbers refer to descriptions in the 38th annual catalogue.

I. COURSE IN AGRICULTURE.

Sophomore Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Agronomy 2a Soils	2	2	Agronomy 2a Soils	2	2
Biology 2 Botany	3	2	Animal Husbandry 3 Judging Breeding Types	2	4
Chemistry 1a Inorganic	3	2	Animal Husbandry 4 Poultry	1	2
English 2 Literature	2	0	Biology 2 Botany	2	2
Horticulture 1a Plant Propagation	2	2	Chemistry 1a Inorganic	3	2
Military Science 1	1	0	English 2 Literature	2	0
Physics 2 General	2	2	Horticulture 2 Vegetable Gardening	3	2
Veterinary Science 1 Anatomy and Physiology	2	2	Military Science	1	0
	17	12		16	14

GROUP A. AGRONOMY.

Junior Year.

Agronomy 3 Farm Crops	3	2	Agronomy 3 Farm Crops	3	2
Chemistry 2 Agricultural	3	0	Agronomy 11 Soil Mapping	0	2
Chemistry 3 Agricultural Analysis	0	4	Chemistry 2 Agricultural	3	0
English 4 Advanced Composition	3	0	Chemistry 3 Agricultural Analysis	0	2
Entomology 1 Systematic	2	2	English 4 Advanced Composition	3	0
Veterinary Science 2 Pharmacology	2	2	Entomology 2 Economic	2	2
			Veterinary Science 3 Non-infectious Diseases	2	2
	13	10		13	10

Elective.

One of the following:

Agricultural Education 1 Psychology	3	0	Agricultural Education 2 Vocational	3	0
Biology 3 Rural Hygiene	2	2	Biology 3 Rural Hygiene	2	2
Chemistry 4a Organic	2	2	Chemistry 4a Organic	2	2
Civil Engineering 2a Surveying	2	4	Agricultural Engineering 4 Irrigation	2	2
Language 1, 3, or 5	3	0	Language 1, 3, or 5	3	0

Senior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Economics 3, Economic Organization or Language	3	0	Economics 3, Economic Organization or Language	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Military Science 2	1	0	Textile Engineering 5 Cotton Classing	1	0
Elective	13	0	Elective	11	0
	21	2		19	2

GROUP B. HORTICULTURE.

Junior Year.

Chemistry 2 Agricultural	3	0	Chemistry 2 Agricultural	3	0
Chemistry 3 Agricultural Analysis	0	4	Chemistry 3 Agricultural Analysis	0	2
English 4 Advanced Composition	3	0	English 4 Advanced Composition	3	0
Entomology 1 Systematic	2	2	Entomology 2 Economic	2	2
Horticulture 3 Tree and Vine Fruits	3	2	Horticulture 4 Plant Breeding	2	2
*Agronomy 3 Farm Crops	3	2	Horticulture 5 Spraying	1	2
			Horticulture 6 Nut Culture	2	2
	14	10		13	10

*Or Veterinary Science 2 ..... 2 2

Elective.

One of the following:

Agricultural Education 1 Psychology	3	0	Agricultural Education 2 Vocational	3	0
Biology 3 Rural Hygiene	2	2	Biology 3 Rural Hygiene	2	2
Chemistry 4a Organic	2	2	Chemistry 4a Organic	2	2
Civil Engineering 2a Surveying	2	4	Agricultural Engineering 4 Irrigation	2	2
Language 1, 3, or 5	3	0	Language 1, 3, or 5	3	0
Horticulture 12 General Forestry	2	2	Horticulture 12 Landscape Art	2	2

Senior Year.

Language or Economics 3 Economic Organization	3	0	Language or Economics 3 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Horticulture 7 Pomology	3	2	Horticulture 9 Experimental	2	2
Military Science 2	1	0	Textile Engineering 5 Cotton Classing	1	0
Elective	13	0	Elective	12	0
	21	2		19	2

GROUP C. ANIMAL HUSBANDRY.

Junior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agronomy 3 Farm Crops	3	2	Agronomy 3 Farm Crops	3	2
Animal Husbandry 5 Breeding	2	2	Animal Husbandry 5 Breeding	2	2
Chemistry 2 Agricultural	3	0	Chemistry 2 Agricultural	3	0
Chemistry 3 Agricultural Analysis	0	4	Chemistry 3 Agricultural Analysis	0	2
English 4 Advanced Composition	3	0	English 4 Advanced Composition	3	0
Veterinary Science 2 Pharmacology	2	2	Veterinary Science 3 Non-infectious Diseases	2	2
			Veterinary Science 4 Obstetrics	2	2
	13	10		15	10

Elective.

One of the following:

Agricultural Education 1 Psychology	3	0	Agricultural Education 2 Vocational	3	0
Biology 3 Rural Hygiene	2	2	Biology 3 Rural Hygiene	2	2
Chemistry 4a Organic	2	2	Chemistry 4a Organic	2	2
Entomology 1 Systematic	2	2	Entomology 2 Economic	2	2
Language 1, 3, or 5	3	0	Language 1, 3, or 5	3	0

Senior Year.

Animal Husbandry 7 Feeding	3	2	Animal Husbandry 7 Feeding	3	2
Economics 3 Economic Organization or Language 2, 4, or 6	3	0	Economics Economic Organization or Language 2, 4, or 6	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Military Science 2	1	0	Veterinary Science 5 Infectious Diseases	2	0
Elective	13	0	Elective	10	0
	21	2		19	2

SENIOR ELECTIVES—GROUPS A, B, C.

The Senior elective, in Groups A, B, C, are to be chosen from the following list, subject to the advice and direction of a member of the Faculty designated for the purpose.

First Term.	Hours per week.	
	Rec.	Pr.
Agricultural Education 3 School Administration	3	0
Agricultural Education 4 Methods	3	0
*Agricultural Education 403 Rural Problems	3	0
†Agricultural Engineering 2 Farm Machinery	2	2
Agronomy 5 Advanced Soils	2	2
Agronomy 6 Farm Management	3	2
Agronomy 8 Plant Breeding	2	2
Agronomy 12 Marketing Problems	3	2
Agronomy 13 Cost Accounting	2	2
Animal Husbandry 8 Advanced Judging	1	4
Animal Husbandry 10 Poultry Judging	2	2
Animal Husbandry 11 Poultry Feeding and Mgm.	2	2
Biology 4 Plant Diseases	3	2
Biology 5 Plant Physiology	2	4
Biology 6 Bacteriology	2	4
Chemistry 6 Advanced Agr. Analysis	2	6
Chemistry 7 Physical Chemistry	2	4
Entomology 3 Fruit Insects	2	2
Horticulture 8 Forestry	2	2
Horticulture 13 Landscape Design	3	4
Horticulture 14 Hist. of Land. Design	2	0
Horticulture 17 Sylviculture	3	2
Horticulture 18 Farm Forestry	2	2
Veterinary Science 6 Anatomy	3	6
Veterinary Science 7 Advanced Lab. Methods	3	0

Second Term.	Hours per week.	
	Rec.	Pr.
Agricultural Education 5 High School Problems	3	0
Agricultural Education 6 High School Agriculture	3	0
*Agricultural Education 404 Agr. Extension and Demonstration	3	0
*Agricultural Education 406 Vocational Education	3	0
†Agricultural Engineering 6 Farm Powers	2	4
Agricultural Engineering 12 Repairing	1	4
Agronomy 6 Farm Management	3	2
Agronomy 8 Plant Breeding	2	4
Agronomy 10 Crop Ecology	2	2
Agronomy 12 Marketing Problems	3	2
Agronomy 14 Advanced Farm Mgm.	1	4
Animal Husbandry 9 Live Stock Management	2	2
Animal Husbandry 11 Poultry Feeding and Mgm.	2	2
Animal Husbandry 12 Incubation and Brooding	1	4
Biology 4 Plant Diseases	3	2
Biology 5 Plant Physiology	2	4
Biology 6 Bacteriology	2	4
Chemistry 6 Advanced Agr. Analysis	2	6
Chemistry 8 Advanced Agricultural	2	4
Entomology 4 Advanced Entomology		
Horticulture 10 Citrus Fruits	2	2
Horticulture 11 Floriculture, Land. Gar.	2	2
Horticulture 11a Floriculture	2	2
Horticulture 13 Landscape Design	3	4
Horticulture 16 Ornamentals	2	0
Horticulture 17 Sylviculture	3	2
Horticulture 19 Forest Mensuration	2	2
Horticulture 20 Wood Preservation	2	0
Veterinary Science 6 Anatomy	3	6
Veterinary Science 7 Advanced Lab. Methods	3	0

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*Described in the 39th catalogue.

†Described in the 38th catalogue under the department of Agronomy.

GROUP D. DAIRY HUSBANDRY.

Junior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agronomy 3 Farm Crops	3	2	Agronomy 3 Farm Crops	3	2
Chemistry 2 Agricultural	3	0	Chemistry 2 Agricultural	3	0
Chemistry 3 Agricultural Analysis	0	4	Chemistry 3 Agricultural Analysis	0	2
Chemistry 4a Organic	2	2	Chemistry 4a Organic	2	2
English 4 Advanced Composition	3	0	English 4 Advanced Composition	3	0
Dairy Husbandry 2 Dairy Machinery	3	4	Dairy Husbandry 3 Butter Making	2	2
			Veterinary Science 4 Obstetrics	2	2
	14	12		15	10

Elective.

One of the following:

Agricultural Education 1 Psychology	3	0	Agricultural Education 2 Vocational	3	0
Language 1, 3, or 5	3	0	Language 1, 3, or 5	3	0
Veterinary Science 2 Pharmacology	2	2	Veterinary Science 3 Non-infectious Diseases	2	2

Senior Year.

Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Animal Husbandry 6 Breeding and Feeding	3	2	Chemistry 9 Dairy	2	6
Biology 7 Dairy Bacteriology	2	4	Biology 7 Dairy Bacteriology	2	4
Dairy Husbandry 4 Creamery Management	3	2	Dairy Husbandry 5 Ice Cream Making	3	2
Economics 3 Economic Organization or Language 2, 4, or 6	3	0	Economics 3 Economic Organization or Language 2, 4, or 6	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Military Science 2	1	0	Veterinary Science 5 Infectious Diseases	2	0
	16	10		16	14

GROUP E. AGRICULTURAL ENGINEERING.

Junior Year.

Agronomy 3 Farm Crops	3	2	Agronomy 3 Farm Crops	3	2
Chemistry 2 Agricultural	3	0	Chemistry 2 Agricultural	3	0
Chemistry 3 Agricultural Analysis	0	4	Chemistry 3 Agricultural Analysis	0	2
English 4 Advanced Composition	3	0	English 4 Advanced Composition	3	0
Civil Engineering 2a Surveying	2	4	Agricultural Engineering 4 Irrigation	2	2
Agricultural Engineering 2 Farm Machinery	2	2	Agricultural Engineering 5 Drainage	2	2
Agricultural Engineering 3 Farm Buildings	2	2	Agricultural Engineering 6 Gas Engines	2	4
	16	14		15	12

Senior Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Economics 3 Economic Organization	3	0	Economics 3 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Agricultural Engineering 7 Farm Tractors	1	4	Agricultural Engineering 10 Farm Tractor Problems	1	4
Agricultural Engineering 8 Concrete on the Farm	1	4	Agricultural Engineering 11 Automobiles	2	2
Agricultural Engineering 9 Powers and Pumps	2	2	Agricultural Engineering 12 Repairing Farm Machinery	1	4
Military Science 2	1	0	Elective	2	2
Elective	2	2			
	14	14		13	14

TWO-YEAR COURSE IN AGRICULTURE.

Second Year.

Agricultural Engineering 51 Irrigation and Drainage	1	2	Agronomy 18 Farm Eqpt. and Mgm.	3	2
Agricultural Engineering 53 Farm Machinery and Motors	1	2	Animal Husbandry 17 Breeding	1	2
Animal Husbandry 19 Poultry	2	2	Animal Husbandry 18 Feeding	2	2
Dairy Husbandry 16 Farm Dairying	2	2	English 10 Composition	3	0
English 10 Composition	3	0	Entomology 10 Economic	2	2
Horticulture 3 Tree and Vine Fruits	3	2	Veterinary Science 16 Animal Husbandry	3	2
	12	10		14	10

IX. COURSE IN ARCHITECTURE.

Sophomore Year.

Architecture 25 Principles of Composition	1	0	Architecture 26 History of Architecture	2	0
Architecture 26 History of Architecture	2	0	Architecture 27 Carpentry Construction	2	2
Architecture 27 Carpentry Construction	2	2	Architecture 28 Architectural Design	0	8
Architecture 28 Architectural Design	0	8	Architecture 29 Freehand Drawing	0	2
Architecture 29 Freehand Drawing	0	4	English 2 Literature	2	0
English 2 Literature	2	0	English 3 Composition	1	0
English 3 Composition	1	0	Mathematics 5 Calculus	6	0
Mathematics 4 Analytics	6	0	Physics 6 Electricity and Magnetism	2	2
Military Science 1 Drill Regulations	1	0	*Language 1, 3, or 5	3	0
*Language 1, 3, or 5	3	0	Military Science	1	0
	18	14		19	14
*Or History 2 English	2	0	*Or History 2 English	2	0

Junior Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Architecture 30 History of Architecture	2	0	Architecture 35 Heating and Ventilating	1	0
Architecture 31 Masonry Construction	2	0	Architecture 36 Steel Construction	2	2
Architecture 32 Masonry Construction	0	2	**Architecture 37 Freehand Drawing	0	4
Architecture 34 Building Sanitation	1	0	Architecture 39a Architectural Design	0	14
**Architecture 37 Freehand Drawing	0	4	Chemistry 1a Inorganic	3	2
Architecture 39a Architectural Design	0	10	Civil Engineering 12 Stresses	2	2
Chemistry 1a Inorganic	3	2	Electrical Engineering 6 Lighting and Wiring	1	0
Civil Engineering 6 Mechanics of Materials	4	2	*Language 2, 4, or 6	3	0
*Language 2, 4, or 6	3	0			
	15	20		12	24
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0

**Not required of students electing Language.

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Architecture 40 History of Ornament	2	0	Architecture 41 Business Practice	1	0
Architecture 43 Architectural Design	0	16	Architecture 42 Hist. of Sculpture and Painting	2	0
Architecture 45 Building Construction	0	4	Architecture 43 Architectural Design	0	18
Architecture 47 Freehand Drawing	0	4	Architecture 45 Building Construction	0	4
Civil Engineering 14 Stresses	2	2	Architecture 47 Freehand Drawing	0	4
Economics 4 Economic Organization	3	0	Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Military Science 2	1	0			
	9	26		7	26

VII. COURSE IN ARCHITECTURAL ENGINEERING.

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Architecture 25 Principles of Composition	1	0	Architecture 26 History of Architecture	2	0
Architecture 26 History of Architecture	2	0	Architecture 27 Carpentry Construction	2	2
Architecture 27 Carpentry Construction	2	2	Architecture 28 Architectural Design	0	8
Architecture 28 Architectural Design	0	8	Architecture 29 Freehand Drawing	0	2
Architecture 29 Freehand Drawing	0	4	English 2 Literature	2	0
English 2 Literature	2	0	English 3 Composition	1	0
English 3 Composition	1	0	Mathematics 5 Calculus	6	0
Mathematics 4 Analytics	6	0	Physics 6 Electricity and Magnetism	2	2
Military Science 1 Drill Regulations	1	0	*Language 1, 3, or 5	3	0
*Language 1, 3, or 5	3	0	Military Science	1	0
	18	14		19	14
*Or History 2 English	2	0	*Or History 2 English	2	0

Junior Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Architecture 30 History of Architecture	2	0	Architecture 36 Steel Construction	2	2
Architecture 31 Masonry Construction	2	0	Architecture 39 Architectural Design	0	8
Architecture 33 Masonry Construction	0	4	Chemistry 1a Inorganic	3	2
Architecture 34 Building Sanitation	1	0	Civil Engineering 10 Masonry Construction	3	0
Architecture 38 Freehand Drawing	0	4	Civil Engineering 12 Stresses	2	2
Architecture 39 Architectural Design	0	8	Physics 7 General	2	0
Chemistry 1a Inorganic	3	2	Physics 9 General	0	2
Civil Engineering 6 Mechanics of Materials	4	2	*Language 2, 4, or 6	3	0
*Language 2, 4, or 6	3	0			
	15	20		15	16
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0
			and Mechanical Eng. 3 Elem. Steam Eng.	3	0

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Architecture 44 Architectural Design	0	8	Architecture 35 Heating and Ventilating	1	0
Architecture 46 Building Construction	0	11	Architecture 41 Business Practice	1	0
Civil Engineering 14 Stresses	2	2	Architecture 46 Building Construction	0	16
Civil Engineering 18 Reinforced Concrete	3	0	Chemistry 10 Geology	4	2
Economics 4 Economic Organization	3	0	Civil Engineering 23 Higher Structures	2	2
English 6 Public Speaking	1	0	Economics 4 Economic Organization	3	0
*Mechanical Engineering 3 Elem. Steam Eng.	3	0	Electrical Engineering 6 Lighting and Wiring	1	0
Military Science 2	1	0	English 6 Public Speaking	1	0
	13	21		13	20

*Or Mech. Eng. 5a .... 2 0 for students who did not elect Language.
Steam Engines or Boilers.

VIII. COURSE IN CHEMICAL ENGINEERING.

Sophomore Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 1 Inorganic	3	4	Chemistry 1 Inorganic	3	4
Drawing 6 Mechanical Drawing	0	2	Drawing 6 Mechanical	0	4
Drawing 33 Freehand Drawing	0	2	English 2 Literature	2	0
English 2 Literature	2	0	English 3 Composition	1	0
English 3 Composition	1	0	Mathematics 5 Calculus	6	0
Mathematics 4 Analytics	6	0	Physics 4 General	3	2
Military Science 1 Drill Regulations	1	0	*Language 1, 3, or 5	3	0
Physics 4 General	3	2	Military Science	1	0
*Language 1, 3, or 5	3	0			
	19	10		19	10
*Or History 2 English	2	0	*Or History 2 English	2	0

Junior Year.

Chemical Engineering 1 Industrial Chemistry	3	0	Chemical Engineering 3 Metallurgy	3	0
Chemical Engineering 2 Quantitative Analysis	0	4	Chemical Engineering 4 Silicate Analysis	0	4
Chemistry 4 Organic	2	2	Chemistry 4 Organic	2	2
Chemistry 5 Economic Geology	2	2	Civil Engineering 6a Mechanics of Materials	2	2
Civil Engineering 7 Hydraulics	2	0	Civil Engineering 7 Hydraulics	2	0
Mathematics 6 Practical	2	0	Electrical Engineering 5 Electrical Machinery	4	3
Mechanical Engineering 3 Elem. Steam Eng.	3	0	*Language 2, 4 or 6	3	0
Mechanical Engineering 15 Wood Turning	0	4			
*Language 2, 4 or 6	3	0			
	17	8		16	11
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0
and Civil Engineering 16 Contracts	2	0	and Mechanical Eng. 4 Kinematics	3	0

Senior Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemical Engineering 5 Physical Chemistry	3	2	Chemical Engineering 5 Physical Chemistry	3	2
Chemical Engineering 6 Technical Analysis	2	6	Chemical Engineering 6 Technical Analysis	2	6
Civil Engineering 15 Water Supply Eng.	2	0	Chemistry 11 History of Chemistry	1	0
Economics 4 Economic Organization	3	0	Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Mechanical Engineering 5 Steam Engines and Boilers	3	0	Mechanical Engineering 5 Steam Engines and Boilers	3	0
Mechanical Engineering 6 Eng. Mechanics	2	0	Mechanical Engineering 6 Eng. Mechanics	2	0
Mechanical Engineering 22a Eng. Laboratory	0	2	Mechanical Engineering 22a Eng. Laboratory	0	2
Military Science 2	1	0			
	17	10		15	10

IV. COURSE IN CIVIL ENGINEERING.

Sophomore Year.

Civil Engineering 1 Surveying, Leveling and Topography	3	4	Civil Engineering 4 Railroad Engineering	3	4
Drawing 33 Freehand	0	2	Drawing 6 Mechanical	0	4
Drawing 6 Mechanical	0	2	English 2 Literature	2	0
English 2 Literature	2	0	English 3 Composition	1	0
English 3 Composition	1	0	Mathematics 5 Calculus	6	0
Mathematics 4 Analytics	6	0	Physics 4 General	3	2
Military Science 1 Drill Regulations	1	0	*Language 1, 3, or 5 English	3	0
Physics 4 General	3	2	Military Science	1	0
*Language 1, 3 or 5	3	0			
	19	10		19	10
*Or History 2 English	2	0	*Or History 2 English	2	0

Junior Year.

Chemistry 1a Inorganic	3	2	Chemistry 1a Inorganic	3	2
Civil Engineering 5 Railroad Engineering	2	3	Civil Engineering 7 Hydraulics	2	2
Civil Engineering 6 Mechanics of Materials	4	2	Civil Engineering 8 Graphics	0	4
Civil Engineering 7 Hydraulics	2	0	Civil Engineering 9 Roads	2	0
**Drawing 9 Topographical	0	2	Civil Engineering 10 Masonry Construction	3	0
Electrical Engineering 5 Electrical Machines	4	0	Civil Engineering 11 Roofs and Bridges	2	0
Mathematics 6 Practical	2	0	Electrical Engineering 5 Electrical Machinery	0	3
*Language 2, 4, or 6	3	0	Mechanical Engineering 3 Elem. Steam Eng.	3	0
			*Language. 2, 4, or 6	3	0
	18	9		15	11

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0
			And Biology 8	1	4

**Students electing language do not take Drawing 9.

Summer Practice, Civil Engineering 24, 4 weeks.

Senior Year.

Civil Engineering 13 Roofs and Bridges	4	8	Civil Engineering 13 Roofs and Bridges	0	4
Civil Engineering 15 Water Supply Engineering	2	0	Civil Engineering 19 Field and Lab. Work	0	4
Civil Engineering 16 Contracts and Specifications	2	0	Civil Engineering 20 Sewerage	2	0
Civil Engineering 17 Irrigation and Drainage	2	0	Civil Engineering 22 Higher Structures	3	2
Civil Engineering 18 Reinforced Concrete	2	0	Civil Engineering 25 Modern Pavements	3	0
Civil Engineering 19 Field and Lab. Work	0	4	Economics 4 Economic Organization	3	0
Economics 4 Economic Organization	3	0	English 6 Public Speaking	1	0
English 6 Public Speaking	1	0	Chemistry 10 Geology	4	2
Mechanical Engineering 22a Engineering Lab.	0	2			
Military Science 2	1	0			
	17	14		16	12

V. COURSE IN ELECTRICAL ENGINEERING.

Sophomore Year.

Drawing 6 Mechanical	0	2	Drawing 6 Mechanical	0	4
Drawing 33 Freehand	0	2	Electrical Engineering 2 Electrical Measurements	2	4
Electrical Engineering 1 Electricity and Magnetism	6	4	English 2 Literature	2	0
English 2 Literature	2	0	English 3 Composition	1	0
English 3 Composition	1	0	Mathematics 5 Calculus	6	0
Mathematics 4 Analytics	6	0	Physics 7 Heat	2	0
Military Science 1 Drill Regulations	1	0	Physics 8 Mechanics	2	0
*Language 1, 3 or 5	3	0	Physics 9 General	0	2
			Mechanical Engineering 15a Wood Turning	0	2
			*Language 1, 3, or 5	3	0
			Military Science	1	0
	19	8		19	12
*Or History 2 English	2	0	*or History 2 English	2	0

Junior Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 1a Inorganic	3	2	Chemistry 1a Inorganic	3	2
Civil Engineering 6 Mechanics of Materials	4	2	Civil Engineering 3 Surveying and Leveling	2	2
Electrical Engineering 3 Direct Currents	3	4	Electrical Engineering 3 Direct Currents	0	4
Mathematics 6 Practical	2	0	Electrical Engineering 4 Electric Lighting	2	0
Mechanical Engineering 3 Elem. Steam Engineering	3	0	Electrical Engineering 12 Telephone Engineering	2	2
Mechanical Engineering 19a Machine Shop Practice	0	2	Electrical Engineering 13 Elem. Alt. Currents	3	0
*Language 2, 4, or 6	3	0	Mechanical Engineering 4 Kinematics	3	0
			*Language 2, 4, or 6	3	0
	18	10		18	10
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0
and Civil Engineering 7 Hydraulics	2	0	and Civil Engineering 7 Hydraulics	2	0

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Electrical Engineering 8 Alternating Currents	3	4	Electrical Engineering 8 Alternating Currents	3	4
Electrical Engineering 9 Electrical Machine Design	3	4	Electrical Engineering 9 Electrical Machine Design	3	4
Electrical Engineering 10 Electric Railways	2	0	Electrical Engineering 10 Electric Railways	2	0
Civil Engineering 16 Contracts and Specifications	2	0	Electrical Engineering 11 Electric Power Distribution	2	0
Economics 4 Economic Organization	3	0	Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Mechanical Engineering 5a Steam Engines and Boilers	2	0	Mechanical Engineering 5a Steam Engines and Boilers	2	0
Mechanical Engineering 22a Engineering Lab.	0	2	Mechanical Engineering 22a Engineering Lab.	0	2
Military Science 2	1	0			
	17	10		16	10

III. COURSE IN MECHANICAL ENGINEERING.

Sophomore Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Drawing 6 Mechanical	0	2	Drawing 6 Mechanical	0	4
Drawing 33 Freehand	0	2	English 2 Literature	2	0
English 2 Literature	2	0	English 3 Composition	1	0
English 3 Composition	1	0	Mathematics 5 Calculus	6	0
Mathematics 4 Analytics	6	0	Mechanical Engineering 4 Kinematics	3	0
Mechanical Engineering 3 Elem. Steam Engineering	3	0	Mechanical Engineering 16 Kinematic Drawing	0	2
Mechanical Engineering 15 Wood Turning	0	4	Mechanical Engineering 17 Pattern Mkg. and Foundry	0	4
Military Science 1 Drill Regulations	1	0	Physics 4 General	3	2
Physics 4 General	3	2	*Language 1, 3, or 5	3	0
*Language 1, 3, or 5	3	0	Military Science	1	0
	19	10		19	12
*Or History 2 English	2	0	*Or History 2 English	2	0

Junior Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 1a Inorganic	3	2	Chemistry 1a Inorganic	3	2
Civil Engineering 6 Mechanics of Materials	4	2	Civil Engineering 12 Stresses	2	2
Mathematics 6 Practical	2	0	Electrical Engineering 5 Electrical Machinery	4	3
Mechanical Engineering 5 Steam Engines and Boilers	3	0	Mechanical Engineering 5 Steam Engines and Boilers	3	0
Mechanical Engineering 6 Engineering Mechanics	2	0	Mechanical Engineering 6 Engineering Mechanics	2	0
Mechanical Engineering 18 Machine Design	0	3	Mechanical Engineering 18 Machine Design	0	3
Mechanical Engineering 19 Machine Shop Practice	0	4	Mechanical Engineering 19 Machine Shop Practice	0	4
*Language 2, 4, or 6	3	0	*Language 2, 4, or 6	3	0
	17	11		17	14
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0
and Mechanical Eng. 10 Graphic Statics of Mach.	2	0	and Mechanical Eng. 11 Pumping Machinery	2	0

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemical Engineering 1 Industrial Chemistry	3	0	Chemical Engineering 3 Metallurgy	3	0
Civil Engineering 7 Hydraulics	2	0	Civil Engineering 7 Hydraulics	2	2
Economics 4 Economic Organization	3	0	Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Mechanical Engineering 7 Thermodynamics	4	0	Mechanical Engineering 8 Eng. Design	3	0
Mechanical Engineering 8 Eng. Design	3	0	Mechanical Engineering 9 Gas Engines	2	0
Mechanical Engineering 20 Machine Shop Practice	0	2	Mechanical Engineering 7 Thermodynamics	2	0
Mechanical Engineering 21 Engineering Design	0	4	Mechanical Engineering 21 Engineering Design	0	4
Mechanical Engineering 22 Engineering Laboratory	0	4	Mechanical Engineering 22 Engineering Laboratory	0	6
Military Science 2	1	0			
	17	10		16	12

VI. COURSE IN TEXTILE ENGINEERING.

Sophomore Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 1a Inorganic	3	2	Chemistry 1a Inorganic	3	2
Drawing 6 Mechanical	0	2	Drawing 6 Mechanical	0	4
Drawing 33 Freehand	0	2	English 2 Literature	2	0
English 2 Literature	2	0	English 3 Composition	1	0
English 3 Composition	1	0	Mechanical Engineering 4 Kinematics	3	0
Mechanical Engineering 3 Elem. Steam Engineering	3	0	Physics 4 General	3	2
Mechanical Engineering 15a Wood Turning	0	2	Textile Engineering 1 Designing	3	2
Military Science 1 Drill Regulations	1	0	*Language 1, 3, or 5	3	0
Physics 4 General	3	2	Military Science	1	8
Textile Engineering 1 Designing	3	0			
*Language 1, 3, or 5	3	0			
	19	10		19	10
*Or History 2 English	2	0	*Or History 2 English	2	0

Junior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 4 Organic	2	2	Chemistry 4 Organic	2	2
Mechanical Engineering 19b Machine Shop Practice	0	4	Electrical Engineering 5 Electrical Machinery	4	3
Textile Engineering 2a Yarn Manufacturing	6	2	Textile Engineering 5 Cotton Classing	1	0
Textile Engineering 3 Designing	3	0	Textile Engineering 2a Yarn Manufacture	3	4
Textile Engineering 4 Cotton Classing	1	0	Textile Engineering 3 Designing	3	0
Textile Engineering 6 Power Weaving	2	4	Textile Engineering 6 Power Weaving	2	4
*Language 2, 4 or 6	3	0	*Language 2, 4 or 6	3	0
	17	12		18	13
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0
and Mechanical Eng. 5a Steam Engines and Boilers	2	0	and Mechanical Eng. 5a Steam Engines and Boilers	2	0

Senior Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Economics 4 Economic Organization	3	0	Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Textile Engineering 7 Yarn Manufacture	3	4	Textile Engineering 7 Yarn Manufacture	3	4
Textile Engineering 8 Designing	4	0	Textile Engineering 8 Designing	4	0
Textile Engineering 9 Power Weaving	2	4	Textile Engineering 9 Power Weaving	2	6
Chemistry 12 Dyeing	2	2	Textile Engineering 10 Yarn Manufacture	2	0
			Textile Engineering 11 Mill Management	2	0
Military Science 2	1	0			
	16	10		17	10

TWO-YEAR COURSE FOR ELECTRICIANS.

Second Year.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Drawing 25 Mechanical	0	4	Drawing 25 Mechanical	0	4
English 10 Rhetoric	3	0	Electrical Engineering 45 Meters	2	0
Electrical Engineering 43 Alternating Currents	3	0	Electrical Engineering 46 Electrical Machinery	5	0
Electrical Engineering 44 Wiring and Illumination	4	0	Electrical Engineering 47 Spec. and Report Writing	1	0
Electrical Engineering 49 Electrical Laboratory	0	8	Electrical Engineering 49 Electrical Laboratory	0	8
Mechanical Engineering 65 Engineering Laboratory	0	3	Mechanical Engineering 76. Boilers and Power Plants		
Mechanical Engineering 75 Eng., Valves and Indicators			Or Electrical Eng. 48 Telephone Engineering	4	0
Or Electrical Eng. 48 Telephone Engineering	4	0	Mechanical Engineering 66 Engineering Laboratory	0	3
			Mechanical Engineering 70 Power Plant Practice	0	2
	14	15		12	17

TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

Second Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Electrical Engineering 51 Applied Electricity	4	4	Electrical Engineering 52 Applied Electricity	4	4
Mechanical Engineering 53 Technical Literature	2	0	Mechanical Engineering 54. Technical Literature	2	0
Mechanical Engineering 55 General Mech. Engineering	3	0	Mechanical Engineering 56. Pumping Machinery	3	0
Mechanical Engineering 57 Internal Combustion Eng.	3	0	Mechanical Engineering 58. Refrigeration	2	0
Mechanical Engineering 59 Machine Design	3	3	Mechanical Engineering 60. Machine Design	3	3
Mechanical Engineering 61 Machine Shop Practice	0	4	Mechanical Engineering 62. Machine Shop Practice	0	3
Mechanical Engineering 63 Engineering Laboratory	0	3	Mechanical Engineering 68. Power Plant Practice	0	4
			Mechanical Engineering 64 Engineering Lab. Practice	0	3
	15	14		14	17

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

Second Year.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Drawing 25 Mechanical	0	4	Drawing 25 Mechanical	0	4
English 10 Composition, Rhetoric	3	0	English 10 Composition, Rhetoric	3	0
Mechanical Engineering 15 Kinematics	0	4	Mechanical Engineering 19b Machine Shop Practice	0	4
Textile Engineering 3 Designing	3	0	Textile Engineering 3 Designing	3	0
Textile Engineering 7 Yarn Manufacture	3	4	Textile Engineering 7 Yarn Manufacture	3	4
Textile Engineering 9a Weaving	3	4	Textile Engineering 9a Weaving	0	4
Textile Engineering 16 Designing	1	0	Textile Engineering 11 Mill Management	2	0
			Textile Engineering 16 Designing	1	0
	13	16		12	16

COURSE IN CHEMICAL ENGINEERING.

(Leading to the Degree of Chemical Engineer.)

Fifth Year.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemical Engineering 11 Adv. Ind. Chemistry	2	12	Chemical Engineering 11 Adv. Ind. Chemistry	2	12
Chemical Engineering 12 Rarer Elements	2	4	Chemical Engineering 13 Chem. Preparations	2	4
Elective	6	0	Elective	6	0

COURSE IN CIVIL ENGINEERING.

(Leading to the Degree of Civil Engineer.)

Fifth Year.

Civil Engineering 31 Astronomy	2	0	Civil Engineering 32 General Civil Engineering	2	2
Civil Engineering 11 Least Squares	2	0	Civil Engineering 14 Contracts	2	0
Civil Engineering 12 Bridge Designing	3	2	Civil Engineering 11 Geodesy	2	0
Civil Engineering 32 General Civil Engineering	2	2	Civil Engineering 12 Bridge Designing	3	2
Elective	6	4	Elective	6	4

COURSE IN ELECTRICAL ENGINEERING.

(Leading to the Degree of Electrical Engineer.)

(For students receiving their bachelor's degree after June, 1913.)

Fifth Year.

Electrical Engineering 31 Adv. Alternating Currents	3	0	Electrical Engineering 31 Adv. Alternating Currents	3	0
Electrical Engineering 32 Electric Machine Design	3	0	Electrical Engineering 34 Power Plant Design	3	0
Electrical Engineering 33 Gen. Electrical Engineering	3	0	Electrical Engineering 33 Gen. Electrical Engineering	3	0
Electrical Engineering 35 Laboratory	0	8	Electrical Engineering 35 Laboratory	0	8
Elective	6	0	Elective	6	0

COURSE IN MECHANICAL ENGINEERING.

(Leading to the Degree of Mechanical Engineer.)

Fifth Year.

Mechanical Engineering Analytical Mechanics	3	0	Mechanical Engineering Analytical Mechanics	3	0
Mechanical Engineering Steam Turbines	3	0	Mechanical Engineering Gas Producers	3	0
Mechanical Engineering Refrigeration	3	0	Mechanical Engineering Power Plants	3	0
Mechanical Engineering	0	8	Mechanical Engineering	0	8
Elective	6	0	Elective	6	0

COURSE IN TEXTILE ENGINEERING.

(Leading to the Degree of Textile Engineering.)

Fifth Year.

First Term.	Hours per week. Rec.	Pr
Textile Engineering 4 Yarn Manufacture	3	4
Textile Engineering 10 Weaving	2	4
Textile Engineering 13 Designing	4	0
Elective	6	2

Second Term.	Hours per week. Rec.	Pr.
Textile Engineering 4 Yarn Manufacture	4	0
Textile Engineering 13 Designing	4	0
Textile Engineering 15 Mill Management	2	0
Textile Engineering 10	0	4
Elective	6	2

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THE JOHN CRERAR LIBRARY

BULLETIN

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

Third Series, Vol. 2 JUNE, 1916 No. 6

FORTIETH

ANNUAL CATALOGUE

SESSION 1915-16

ANNOUNCEMENTS FOR 1916-17

Published monthly by the Agricultural and Mechanical College
of Texas

Entered as second class matter August 7, 1913, at the postoffice at College Station, Texas,
under the Act of August 24, 1912.

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Von Boeckmann-Jones Co., Printers, Austin, Texas.
1916

THE
JOHN CRERAR
LIBRARY

CALENDAR

1916

JULY

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COLLEGE CALENDAR.

1916.

Entrance Examinations, Monday, Tuesday, September 25, 26.

Deficiency Examinations, September 25, 26.

First Term begins Tuesday, September 26.

Registration of students, September 26, 27, 28.

Recitations begin Friday, September 29.

Opening exercises, Assembly Hall, September 29, 10 a. m.

National Holiday, Thanksgiving Day.

Christmas Holidays begin December 22.

1917.

Last day of the Christmas Holidays, Tuesday, January 2.

Recitations resumed, Wednesday, January 3, 8 a. m.

Short Winter Course in Highway Engineering begins Wednesday, January 10.

Registration for Second Term, February 5, 6, 7, 8.

Second Term begins Thursday, February 8.

February 22, Washington's Birthday.

March 2, Texas Independence Day.

April 21, San Jacinto Day.

Commencement Sermon, Sunday, June 10.

Exhibition of Departments and of Work of Students, June 11.

Commencement Day, June 12.

BOARD OF DIRECTORS.

JOHN I. GUION, President.
L. J. HART, Vice-President.

Terms Expire 1917.

T. E. BATTLE	*Marlin.*
H. A. BREIHAN	*Bartlett.*
J. SHEB WILLIAMS	*Paris.*

Terms Expire 1919.

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JOHN I. GUION	*Ballinger.*
L. J. HART	*San Antonio.*

Terms Expire 1921.

A. B. DAVIDSON	*Cuero.*
J. R. KUBENA	*Fayetteville.*
W. A. MILLER	*Amarillo.*

6

OFFICERS OF ADMINISTRATION.

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Director of the Agricultural Experiment Station.

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Dean of the School of Agriculture.

DAVID WENDEL SPENCE, C. E.,
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Director of the Engineering Experiment Station.

CLARENCE OUSLEY,
Director of the Extension Service.

JAMES R. HILL, Second Lieutenant, Cavalry, U. S. A.,
Commandant of Cadets.

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State Entomologist.

J. H. FOSTER, B. S., M. F.,
State Forester.

OTTO EHLINGER, Ph. G., M. D.,
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Professor of Civil Engineering.

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Professor of Horticulture.

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A. MITCHELL, B. C. E.,
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MARTIN L. HAYES, B. S., A. M.,
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H. E. SMITH, M. E.,
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Professor of Dairy Husbandry.

W. T. WRIGHT, B. S., A. B.,
Professor of Physics.

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Professor of Economics.

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Professor of Highway Engineering.

JAMES R. HILL, Second Lieutenant, Cavalry, U. S. A,
Professor of Military Science and Tactics,
Commandant of Cadets.

R. ADELSPERGER, B. A., B. S.,
Professor of Architecture and Architectural Engineering

R. P. MARSTELLER, D. V. M.,
Professor of Veterinary Medicine.

A. C. LOVE, B. S.,
Professor of Railway Engineering.

E. C. GEE, B. S.,
Professor of Agricultural Engineering.

J. H. FOSTER, B. S., M. F.,
Professor of Forestry.

R. F. SMITH,
Associate Professor of Mathematics.

STANDING COMMITTEES OF THE FACULTY.

AFFILIATED SCHOOLS.—Hayes, Fountain, Hedges.
ATHLETICS.—Bagley, Love, Campbell.
CATALOGUE.—Puryear, Spence.
COMMENCEMENT.—Kibler, Gee, Morrison.
COMMUNITY INTERESTS.—Morgan, Fermier, Chastain.
DISCIPLINE.—Hill, Puryear, Kyle, Spence.
ENTERTAINMENTS.—Campbell, Foster, Bagley.
EXECUTIVE.—Puryear, Kyle, Spence.
HIGH SCHOOL DAY.—Kyle, Hayes, Hill.
LABORATORY FEES.—Ball, Wright.
LIBRARY.—Fountain, Adelsperger.
NOMINATIONS.—Bizzell, Puryear, Kyle, Spence.

RULES AND REGULATIONS.—Fermier, Ridgway.
SANITATION.—Bizzell, Ball, Marsteller.
SCHEDULE.—Bolton, Burns.
STUDENT LABOR.—Fountain, Ridgway, R. F. Smith.
STUDENT ORGANIZATION AND PUBLICATIONS.—Mitchell, H. E. Smith.

OTHER OFFICERS OF INSTRUCTION.

J. J. RICHEY, C. E.,
Associate Professor of Civil Engineering.

W. H. THOMAS, B. Lit.,
Associate Professor of English.

*A. T. POTTS, B. S.,
Associate Professor of Horticulture.

J. D. BLACKWELL, B. Pd., B. S. A.,
Associate Professor of Agricultural Education.

J. H. CANNON, B. S.,
Associate Professor of Electrical Engineering.

B. K. COGHLAN, B. S.,
Associate Professor of Highway Engineering.

S. A. McMILLAN, B. S.,
Associate Professor of Agronomy.

F. W. BELL, B. S. A.,
Associate Professor of Animal Husbandry.

L. B. BURK, B. S. A.,
Associate Professor of Animal Husbandry.

J. C. OLSEN, B. S.,
Associate Professor of Farm Terracing.

N. M. McGINNIS, B. S.,
Associate Professor of Horticulture.

O. B. WOOTEN, B. S.,
Associate Professor of Electrical Engineering.

C. A. WOOD, B. S. A.,
Associate Professor of Agronomy.

F. HENSEL, M. S.,
Associate Professor of Horticulture.

D. C. MILLER, C. E.,
Associate Professor of Civil Engineering.

S. W. BILSING, B. S., M. A.,
Associate Professor of Entomology.

---

*Absent on leave, 1915-16.

H. B. GORDON, M. S., Ph. D.,
Associate Professor of Chemistry.

J. W. MITCHELL, B. A.,
Assistant Professor of Mathematics.

J. N. MICHIE, B. A., B. S.,
Assistant Professor of Mathematics.

C. S. TATUM, B. S.,
Assistant Professor of Textile Engineering.

J. D. GARNER, A. M., LL. B.,
Assistant Professor of Mathematics.

H. E. HAYDEN, M. A.,
Assistant Professor of Biology.

G. A. GEIST, B. S.,
Assistant Professor of Drawing.

*W. P. NELSON, JR.,
Assistant Professor of Chemistry.

D. C. JONES, B. A.,
Assistant Professor of Mathematics.

**I. C. NICHOLS, M. A., M. S.,
Assistant Professor of Mathematics.

W. H. McPHEETERS, B. S.,
Assistant Professor of Physics.

D. B. COFER, A. B.,
Assistant Professor of English.

F. J. SKEELER, B. S.,
Assistant Professor of Physics.

A. H. HUTCHINSON, M. A., Ph. D.,
Assistant Professor of Biology.

H. CASSIDAY, A. M.,
Assistant Professor of Biology.

J. A. CLUTTER, B. S.,
Assistant Professor of Dairy Husbandry.

I. E. COWART, M. S.,
Assistant Professor of Horticulture.

ROBIN BEACH, B. S.,
Assistant Professor of Electrical Engineering.

---

*Resigned March, 1916.

**Absent on leave, 1915-16.

W. T. MAGEE, B. S. A.,
Assistant Professor of Animal Husbandry.

LEROY RHODES, B. S.,
Assistant Professor of Agricultural Engineering.

E. W. KELLOGG, C. E.,
Assistant Professor of Electrical Engineering.

T. J. CONWAY, B. S.,
Assistant Professor of Animal Husbandry.

R. D. BRACKETT, A. B.,
Assistant Professor of English.

W. WIPPERMANN, B. S.,
Assistant Professor of Mechanical Engineering.

D. J. BROWN, M. A.,
Assistant Professor of Chemistry.

*A. B. RAY, M. A.,
Assistant Professor of Chemistry.

J. A. HERRINGTON, B. S.,
Instructor in Mechanical Engineering.

L. L. CHAPPELLE,
Instructor in Mechanical Engineering.

J. D. BOND, B. A.,
Instructor in Mathematics.

P. G. GUNTER, M. A.,
Instructor in English.

F. W. REDLICH, B. S.,
Instructor in Drawing.

R. C. DUNN, D. V. M.,
Instructor in Veterinary Science.

E. E. McADAMS, B. S.,
Instructor in Physics.

L. L. CLICK, B. S. E.,
Instructor in English.

E. L. REED, A. B.,
Instructor in Biology.

G. P. WILSON, A. B.,
Instructor in English.

---

*From April 1, 1916.

*J. E. ABSHIRE, A. M.,
Instructor in History.

E. F. BATES, M. S.,
Instructor in Physics.

C. E. HANSON, A. B., B. S.,
Instructor in Mechanical Engineering.

G. W. HANSON, B. S.,
Instructor in Mechanical Engineering.

ALLAN BURTON, B. S.,
Instructor in Architecture.

GLEN H. MULLIN, A. B.,
Instructor in English.

M. H. YOUNG, B. S.,
Instructor in Agronomy.

A. E. PARMELEE, B. S.,
Instructor in Chemistry.

C. G. MARTINSON, B. S.,
Instructor in Mechanical Engineering.

B. W. BITTLE, A. M.,
Instructor in English.

B. O. BETHELL, D. V. M.,
Instructor in Veterinary Medicine.

W. S. BECKWITH, A. B.,
Instructor in Mathematics.

C. F. SPARKMAN, B. Pd., M. A., Ph. D.,
Instructor in Modern Languages.

E. LANGFORD, B. S.,
Instructor in Drawing.

J. B. OVERSTREET, B. S.,
Instructor in Chemistry.

E. B. REYNOLDS, M. S.,
Instructor in Agronomy.

H. M. BRUNDRETT, B. S.,
Instructor in Entomology.

W. T. BRYANT, Ch. E.,
Instructor in Chemistry.

C. L. WILSON,
Instructor in Mechanical Engineering.

---

*Absent on leave, 1915-16.

*H. B. KRAUSZ,
Instructor in Forestry.

P. GROGINSKI, B. S.,
Assistant in Electrical Engineering.

L. P. THOMAS,
Assistant in Dairy Husbandry.

SUMMARY OF TEACHING STAFF

As of April 1, 1916.

Professors	27
Associate Professors	18
Assistant Professors	25
Instructors	30
Assistants	2
	102
Absent on leave	3
	99

---

*From April 1, 1916.

OTHER OFFICERS OF THE COLLEGE.

B. SBISA,
Supervisor of the Subsistence Department.

S. G. BAILEY,
Secretary to the President.

W. L. DRIVER,
Physical Director.

E. H. W. HARLAN,
Football Coach.

D. V. GRAVES,
Baseball Coach.

F. D. STEGER,
Secretary, Young Men's Christian Association.

J. M. KENNEY, Quartermaster-Sergeant, U. S. A., Retired.
GEORGE SMART, First Sergeant, U. S. A., Retired.
J. C. HYLAND, Ordnance Sergeant, U. S. A., Retired.
Assistant Commandants.

JOHN J. HOWARD, First Sergeant, U. S. A., Retired.
THOMAS MORAN, First Sergeant, U. S. A., Retired.
Night Sergeants.

IKE S. ASHBURN,
Publicity Agent,
Secretary to the Board of Directors.

R. K. CHATHAM,
Manager Cadet Exchange Store.

TEXAS AGRICULTURAL EXPERIMENT STATION.

Main Station, College Station.

*STATION STAFF.

Administration:

B. YOUNGBLOOD, M. S., *Director.*
A. B. CONNER, B. S., *Vice Director.*
CHAS. A. FELKER, *Chief Clerk.*
A. S. WARE, *Secretary.*

Division of Veterinary Science:

M. FRANCIS, D. V. M., *Veterinarian in Charge.*
H. SCHMIDT, D. V. M., *Veterinarian.*

Division of Chemistry:

G. S. FRAPS, Ph. D., *Chemist in Charge; State Chemist.*
R. H. RIDGELL, B. S., *Assistant Chemist.*
FRANK HODGES, B. S., *Assistant Chemist.*
W. T. P. SPROTT, B. S., *Assistant Chemist.*

Division of Horticulture:

H. NESS, M. S., *Horticulturist in Charge.*
W. S. HOTCHKISS, *Horticulturist.*

Division of Animal Husbandry:

J. C. BURNS, B. S., *Animal Husbandman, Feeding Investigations.*
J. M. JONES, A. M., *Animal Husbandman, Breeding Investigations.*

Division of Entomology:

F. B. PADDOCK, B. S. E., *Entomologist in Charge; State Entomologist.*

County Apiary Inspectors.

R. C. ABERNATHY, Ladonia.
WILLIAM, ATCHLEY, Mathis.
J. W. E. BASHAM, Barstow.
VICTOR BOEER, Jourdanton.
T. W. BURLESON, Waxahachie.
W. C. COLLIER, Goliad.
E. W. COTHRAN, Roxton.
G. F. DAVIDSON, Pleasanton.
JOHN DONEGAN, Seguin.
DR. GEO. J. ELAM, Marlin.
A. R. GRAHAM, Milano.
H. GROSSENBACHER, San Antonio.
J. B. KING, Batesville.
DR. N. G. LeGEAR, Waco.
R. A. LITTLE, Pearsall.
H. L. MOFIELD, Hondo.
M. C. STEARNS, Brady.
S. H. STEPHENS, Uvalde.
M. B. TALLY, Victoria.
JAS. W. TRAYLOR, Enloe.
R. E. WATSON, Heidenheimer.
W. H. WHITE, Greenville.

Division of Agronomy:

A. B. CONNER, B. S., *Agronomist in Charge.*
A. H. LEIDIGH, B. S., *Agronomist.*
LOUIS WERMELSKIRSCHEN, B. S., *Agronomist.*

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*As of March 1, 1916.

Division of Plant Pathology and Physiology:
J. J. TAUBENHAUS, Ph. D., *Plant Pathologist and Physiologist in Charge.*
N. D. ZUBER, B. S., *Fellow and Laboratory Assistant.*

****Division of Farm Management:**
REX E. WILLARD, M. S., *Farm Management and Expert in Charge.*

Division of Poultry Husbandry:
R. N. HARVEY, B. S., *Poultryman in Charge.*

Division of Forestry:
J. H. FOSTER, M. F., *Forester in Charge; State Forester.*

Division of Plant Breeding:
E. P. HUMBERT, Ph. D., *Plant Breeder in Charge.*

Division of Feed Control Service:
JAMES SULLIVAN, *Executive Secretary.*
J. H. ROGERS, *Inspector.*
W. H. WOOD, *Inspector.*
T. H. WOLTERS, *Inspector.*
S. D. PEARCE, *Inspector.*
W. M. WICKES, *Inspector.*
T. B. REESE, *Inspector.*

Substations.

No. 1, Beeville, Bee County:
E. E. BINFORD, B. S., *Superintendent.*

No. 2, Troup, Smith County:
W. S. HOTCHKISS, *Superintendent.*

No. 3, Angleton, Brazoria County:
N. E. WINTERS, B. S., *Superintendent.*

No. 4, Beaumont, Jefferson County:
H. H. LAUDE, B. S., *Superintendent.*

No. 5, Temple, Bell County:
A. K. SHORT, B. S., *Superintendent.*

No. 6, Denton, Denton County:
V. L. CORY, B. S., *Superintendent.*

No. 7, Spur, Dickens County:
R. E. DICKSON, B. S., *Superintendent.*

No. 8, Lubbock, Lubbock County:
R. E. KARPER, B. S., *Superintendent.*

No. 9, Pecos, Reeves County:
J. W. JACKSON, B. S., *Superintendent.*

No. 10 (Feeding and Breeding Substation), College Station, Brazos County:
T. M. REDDELL, *Superintendent.*
G. F. JORDAN, B. S., *Scientific Assistant.*

No. 11, Nacogdoches, Nacogdoches County:
G. T. McNESS, *Superintendent.*
D. T. KILLOUGH, B. S., *Scientific Assistant.*

**No. 12, Chillicothe, Hardeman County:
R. W. EDWARDS, B. S., *Superintendent.*

**In cooperation with United States Department of Agriculture.

TEXAS ENGINEERING EXPERIMENT STATION.

D. W. SPENCE,
Dean of Engineering,
Director.

ADVISORY COUNCIL.

R. ADELSPERGER, B. A., B. S.,
Professor of Architecture and Architectural Engineering.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

T. L. KIBLER, M. A., Ph. D.,
Professor of Economics.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

R. L. MORRISON, M. A.,
Professor of Highway Engineering.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

W. T. WRIGHT, B. S., A. B.,
Professor of Physics.

H. E. SMITH, M. E.,
Professor of Steam Engineering.

J. B. BAGLEY, B. A.,
Professor of Textile Engineering.

EXTENSION SERVICE.

(Agricultural and Mechanical College of Texas and United States Department of Agriculture Cooperating.)

CLARENCE OUSLEY,
Director.

*W. F. PROCTER, *State Agent;* SETH B. HOLMAN, *Executive Secretary;* WALTON PETEET, *Editor Extension Publication.*

STAFF.

Farm Demonstration.

T. O. WALTON, *Chief;* J. L. QUICKSALL, Waco; WILLIAM GANZER, Denton; E. GENTRY, Mineola; G. W. ORMS, Mineola, and M. T. PAYNE, San Antonio. *District Agents;* ————————, *Special Agent;* H. H. WILLIAMSON, B. S., and C. C. FRENCH, *State Agents Boys' Clubs;* S. G. RUBINOW, B. S. A., M. S., *Special Agent Boys' Clubs.*

Home Demonstration.

MISS BERNICE CARTER, *State Agent Girls' Clubs;* MRS. DAISY M. FRAZIER, Springfield, and MISS LILLIAN SHACKELFORD, Jefferson, *District Agents;* MRS. NAT P. JACKSON, A. M., *Organizer Women's Clubs;* MISS MAUDE OSBORNE, *Assistant Organizer Women's Clubs;* MISS CORNELIA A. SIMPSON, MRS. G. M. GARREN, and MRS. BEULAH A. MARSHALL, *Demonstrators.*

Plant Industry.

W. B. LANHAM, B. S. A., *Chief;* J. C. OLSEN, B. S., *Agricultural Engineer;* G. M. GARREN, *Agronomist;* F. H. BLODGETT, Ph. D., *Plant Pathologist;* J. A. EVANS, *Assistant Horticulturist;* M. E. HAYS, B. S. A., *Assistant Entomologist.*

Animal Industry.

C. M. EVANS, B. S., M. S. A., *Chief;* J. LYNN THOMAS, B. S., *Special Agent Creamery Operation;* R. L. POU, B. S., *Special Agent Dairy Production;* F. W. KAZMEIER, *Poultry Husbandman;* FRANK R. JONES, D. V. M., *Special Agent Hog Cholera Prevention;* ————————, *Assistant in Animal Feeding;* ————————, *Assistant in Animal Breeding.*

Rural Economics.

H. M. ELIOT, M. S. A., *Chief;* R. L. BENNETT, M. S., *Adviser in Operating Credit;* DR. R. M. HARKEY and H. L. McKNIGHT, *Special Agents in Organization and Marketing;* FRANK CLARKE, Waco, *Special Agent in Operating Credit.*

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*Died, January 18, 1916.

ADMINISTRATION OF STATE LAWS.

Feed Control Law.

Administered by the Director of the Agricultural Experiment Station.

Fertilizer Law.

G. S. FRAPS, Ph. D.,
State Chemist.

S. E. ASBURY, M. S.,
Assistant State Chemist.

HERMAN LEBESON, M. S.,
J. W. ENOCHS, B. S.,
CHARLES BUCKWALD, M. S.,
Assistant Chemists.

Foul Brood Law.

F. B. PADDOCK, B. S.,
State Entomologist.

O. K. COURTNEY, B. S.,
Assistant State Entomologist.

Forestry Law.

J. H. FOSTER, B. S., M. F.,
State Forester.

HARRY B. KRAUSZ,
Technical Assistant.

GEO. W. JOHNSON,
Foresty Agent for East Texas.

HISTORICAL SKETCH.

The Agricultural and Mechanical College of Texas, like the land grant institutions in other States of the Union, owes its origin to an act of Congress approved July 2, 1862. This act donated public lands to the several States and Territories which might provide colleges for the benefit of agriculture and the mechanic arts, and directed the Secretary of the Interior to issue land scrip to the States in which there was not the requisite quantity of public land. The act further directed that the money derived from this source should constitute a perpetual fund, the principal of which should remain forever undiminished, and the interest of which should be inviolably appropriated by each State to the endowment, support and maintenance of at least one technological college, whose leading subject should be, without excluding other scientific and classical studies, and including military tactics, to teach branches of learning pertaining to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life. It was further provided that the provisions of the act should be formally accepted by the State Legislature. By joint resolution approved November 1, 1866, the Legislature of Texas accepted the provisions of the Congressional legislation, and accordingly there was issued to Texas scrip for 180,000 acres of public land, which was sold for $174,000. This amount was invested in Texas 7 per cent gold frontier bonds. At the time of the opening of the College there was an addition to the fund of accrued interest amounting to $35,000, which was invested in 6 per cent State bonds.

In an act approved April 17, 1871, the Legislature provided for the establishment of the Agricultural and Mechanical College. By the terms of this act and later acts, appropriations aggregating $187,000 were made for buildings and equipment. A commission to locate the College was created by the Legislature. After careful investigation, the commission accepted the proposition of the citizens of Brazos county, and located the institution on a tract of 2416 acres of land in that county. Finally, the constitutional convention of 1876 constituted the College a branch of the University of Texas, and, in accordance with the terms of the Federal legislation, designated it as an institution for instruction in agriculture and the mechanic arts and the natural sciences connected therewith. The convention further provided that the Legislature should have the right to levy taxes for the maintenance and support of the Agricultural and Mechanical College.

The College was formally opened for the reception of students October 4, 1876. By means of financial aid voted by Congress and of appropriations made by the State Legislature, there has been developed a considerable foundation at the College for instruction, for investigation, and for experiment.

The physical plant of the College now includes nine dormitories, an academic building, a Y. M. C. A. building, a mess hall, an assembly hall, an agricultural and horticultural building, a chemical and veterinary building, a civil engineering building, an electrical engineering building, an experiment station building, a mechanical engineering building, a textile engineering building, a hospital, a veterinary hospital, a farm implement building, a natatorium, a power plant, a laundry, a sewerage system, barns and outhouses, and residences for instructors and officers, with a total valuation of approximately $1,750,000.

GOVERNMENT.

The government of the College is vested in a Board of nine directors, appointed by the Governor for terms of six years.

ADMINISTRATION.

The immediate regulation and direction of the affairs of the College are delegated by the Board of Directors to the President and the Faculty.

ORGANIZATION.

The College comprises the Schools of Agriculture, of Engineering, of Veterinary Medicine, the Agricultural Experiment Station, the Engineering Experiment Station, and the Extension Service. The Faculty of the College directs the general policy of the institution and has supervision over matters not specifically assigned to the other Faculties. The Experiment Stations and the Extension Service are each under the supervision of a Director.

DEPARTMENTS.

The College has now in operation the following departments of instruction:

Agricultural Education.
Agricultural Engineering.
Agronomy.
Animal Husbandry.
Architecture and Architectural Engineering.
Biology.
Chemistry and Chemical Engineering.
Civil Engineering.
Dairy Husbandry.
Drawing.
Economics.
Electrical Engineering.
English.
Entomology.
Forestry.
History.
Horticulture.
Mathematics.
Mechanical Engineering.
Military Science and Tactics.

Modern Languages.
Physics.
Textile Engineering.
Veterinary Medicine.

DISCIPLINE.

By reason of its isolated location the College is able to exercise effective oversight over the student body. The authorities do not undertake to restrain the liberty of the student more than is necessary for the securing of good results in scholarship and conduct. Each student is expected at all times to conduct himself as a gentleman, and to attend promptly and faithfully to all his duties.

Students are not allowed to leave the College grounds, either to visit neighboring towns, or their homes, without first securing a furlough from the Commandant of Cadets or from the President.

When a student overstays a furlough which extends through the Christmas holidays or the summer vacation, his name will be dropped from the rolls.

The College encourages the attendance of young men who have a serious purpose and who wish to secure a thorough technological training. The Faculty will do everything in its power to assist every cadet in securing a sound education and in forming correct habits, but will not tolerate the presence of young men who evince a determination not to study and not to comply with reasonable regulations.

For improper conduct or failure to keep up with his studies, a student may at any time be required to withdraw from College.

REPORTS.

In order to keep parents systematically informed concerning the progress of their sons, reports, showing class standing and record of conduct, are sent out from the Dean's office at the end of each term.

LOCATION.

The College is situated at College Station, in the county of Brazos, and is 350 feet above sea level. The Houston & Texas Central and the International & Great Northern Railroads run through the grounds, daily trains stopping at the stations, about 650 yards from the academic building. Students and visitors are advised to take trains arriving in the daytime.

POSTOFFICE.

College Station is a money order postoffice. Letters intended for persons at the College should not be directed to Bryan. At College Station there are telegraph and express offices.

HEALTH.

The buildings of the College are situated on the crest of a wide divide, with sufficient slope in every direction to insure proper drainage. The health of the student body, as shown by the daily records of the institution, is all that could be expected at any location in the State.

The work of sanitation is carried on throughout the entire year, with especial reference to the eradication of mosquitoes, flies and other disease-bearing agencies.

Drinking water is supplied by wells varying in depth from 300 feet to 1300 feet.

The barracks are inspected daily, and are kept neat and clean throughout. The rooms are well lighted and comfortable.

Drill, shop and field practice, work and outdoor athletic sports furnish sufficient and varied exercise and contribute very much to the maintenance of health and proper physical development.

There is no endemic disease at the College; most of the sickness is the result of indiscretion on the part of the student, or is due to the introduction of some mild epidemic disease, such as measles or mumps.

HOSPITAL.

The hospital is a two-story frame structure. There are three wards with bath, toilet rooms, etc., capable of accommodating about twenty-five patients, with several small rooms for the isolation of patients suffering from any common epidemic disease, such as mumps or measles. The sick in the hospital are carefully looked after by competent trained nurses under the direction of the College Surgeon. The diet of sick students is a matter of no little concern, and great care is taken to supply such nourishment as is best adapted to the condition of each patient. Convalescent patients after leaving the hospital are given orders by the surgeon for special diet at the mess hall for such time as is found necessary. A new hospital, of fireproof construction, is now being erected at a cost of $50,000 and will be ready for use by the opening of next session.

COURSES OF STUDY.

There are twelve regular Courses, extending through four years; eleven of them lead to the degree of Bachelor of Science, the particular Course pursued being specified in the diploma; the Course in Veterinary Medicine leads to the degree of Doctor of Veterinary Medicine; and there are graduate Courses and short Courses as shown below.

REGULAR COURSES.

I. Course in Agriculture.
III. Course in Mechanical Engineering.
IV. Course in Civil Engineering.
V. Course in Electrical Engineering.
VI. Course in Textile Engineering.
VII. Course in Architectural Engineering.
VIII. Course in Chemical Engineering.
IX. Course in Architecture.
X. Course in Science.
XI. Course in General Engineering.
XII. Course in Military Engineering.
XIII. Course in Veterinary Medicine.

GRADUATE COURSES.

(A) A graduate Course in Agriculture, leading to the degree of Master of Science in Agriculture.

(B) Graduate Courses leading to the degrees of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, Textile Engineer.

SHORT COURSES.

Two Years.

(C) Prescribed Course in Agriculture.
(D) Elective Course in Agriculture.
(E) Course in Engineering.
(F) Course for Electricians.
(G) Course for Power Plant Operators.
(H) Course in Textile Engineering.
(L) Course in Telephony.
(M) Course in Agricultural Engineering.

SUMMER COURSES.

Summer School of Cotton Classing. Six weeks.
Summer Course for Farmers. One week.

WINTER COURSE.

Course for Road Supervisors and County Surveyors.

METHOD AND SCOPE OF INSTRUCTION.

In all Courses the fundamental idea is education in practical science, particularly in agriculture and in engineering. With this idea in view, instruction is given in English, history, economics, mathematics, physics, chemistry and in other studies which lie at the foundation of a sound education and furnish the best preparation for the more technical studies of the several courses. Instruction is given by the use of text-books, by lectures and recitations; also by practice in the shop, field, laboratory, and drawing room. These practical exercises have a high educational value, and serve a useful purpose in fixing and rendering clear the ideas presented in the class room; they have also a practical value, for they are, in great measure, examples of just such problems as the scientific agriculturist or engineer will encounter in the pursuit of his calling. For convenience of instruction, the classes are subdivided into sections of suitable size. Unannounced written exercises and tests are given at the discretion of instructors. Regular written examinations are held at the end of each term.

The military feature, made necessary by the acceptance of the Federal grants, is an important adjunct to the other work of the College. It is conducive to health and to bodily grace and strength, and cultivates habits of strict attention and of obedience, punctuality, neatness and regularity.

CURRICULA, THEORY, PRACTICE, TERM-HOUR.

The curricula shown under School of Agriculture and School of Engineering apply to the classes entering September, 1915, and thereafter. The number following the name of a department refers to the number of the course as shown under the caption "Departments of Instruction."

The time devoted each week to the several subjects is expressed in clock-hours. The hours devoted to "theory" (which includes recitations and lectures) are indicated in the column headed "Rec.," the hours devoted to "practice" (which includes work in laboratory, shop, drawing room or field) are indicated in the column headed "Pr."

A "term-hour" is one clock-hour of "theory" or two clock-hours of "practice."

The curricula for the classes of '17, '18 are shown in the Appendix.

NOTES.—1. In addition to the work shown in the several curricula, students taking English are required to attend conferences with their instructors; and all undergraduates have military drill three times a week.

2. In engineering courses, freshmen are required to attend an engineering assembly once a month; sophomores, juniors and seniors, once a week.

ADMISSION.

Requests for entrance blanks and all communications in regard to admission should be addressed to

THE REGISTRAR,
Agricultural and Mechanical College of Texas,
College Station, Texas.

GENERAL REQUIREMENTS.

AGE, HEALTH, CHARACTER.

The applicant for admission must be at least sixteen years old and physically able to perform the duties of a cadet. He must be free from contagious or infectious disease. If he comes from another college he must present a certificate of honorable dismissal.

VACCINATION.

The applicant for admission must present a certificate signed by a physician, in one of the forms given below:

1. ...., Texas, ...191....
This is to certify that.........................has had smallpox.
(Signed) ....M. D.

2. ...., Texas, ...191....
This is to certify that.........................has been successfully vaccinated at two different times, the dates being..............
....
(Signed) ....M. D.

3. ...., Texas, ...191....
This is to certify that.........................has been successfully vaccinated within the last five years.
(Signed) ....M. D.

4. ...., Texas, ...191....
This is to certify that I have today vaccinated....................
....
(Signed) ....M. D.

SCHOLARSHIP REQUIREMENTS.

The scholarship requirements for admission are expressed in terms of units.

Definition of a Unit.—"A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work.

This statement is designed to afford a standard of measurement for

the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but, under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute hours, or their equivalent. Schools organized on any other than a four-year basis can, nevertheless, estimate their work in terms of this unit. A four years' secondary school curriculum should be regarded as representing not more than sixteen units of work."

The following statements show in detail the requirements for admission to the Freshman class and to the several short Courses; and the ways in which the required entrance units may be secured:

ADMISSION TO THE FRESHMAN CLASS.

Full Admission.—For full admission to the Freshman Class the applicant must present fourteen units, of which the five and one-half units in list A, below, are prescribed for all applicants. The remaining eight and one-half units must be chosen from list B.

Conditional Admission.—The applicant who presents the five and one-half units in list A and enough elective units from list B to make a total of twelve units will be admitted conditionally. Students admitted conditionally must, within two years, make up two units by examination or by extra work in the College.

LIST A. PRESCRIBED UNITS.

Algebra through quadratics	1½ units
Plane Geometry	1 unit
English	3 units
Total	5½ units

LIST B. ELECTIVE UNITS.

Agriculture	1, 2, 3 or 4 units
American History	½ or 1 unit
Ancient History	1 unit
Bookkeeping	½ unit
Botany	½ or 1 unit
Chemistry	1 unit
Civics	½ unit
Drawing	½ or 1 unit
English	1 unit
English History	1 unit
French	1 or 2 units
German	1 or 2 units
Latin	1, 2, 3, or 4 units
Manual Training	½ or 1 unit
Medieval and Modern History	1 unit
Physics	1 unit
Physiography	½ unit

Physiology	½ unit
Spanish	1 or 2 units
Solid Geometry	½ unit
Stenography	½ unit
Trigonometry	½ unit
Typewriting	½ unit

Special Requirements.—1. In the School of Engineering, students not presenting Solid Geometry for entrance will be required to take that subject as an extra study in the first term of the Freshman year. Special classes will be formed for this purpose.

2. Students admitted conditionally and not presenting Physics for entrance will be required to take an elementary course in Physics as an extra study during the Freshman year.

3. Freshmen who are required to take an extra study may be required to postpone one of the regular studies of the Freshman year.

METHODS OF ADMISSION.

The required entrance units may be secured:

(A) By certificate from a secondary school.

(B) By examination.

(C) By completing the work of the first year of certain short Courses.

(A) ADMISSION BY CERTIFICATE.

Admission to the Freshman Class by certificate will be granted to graduates of Texas High Schools designated by the State Department of Education as High Schools of the First Class, to graduates of affiliated private schools, and to graduates of schools of like standing in other States. Such graduates will be admitted without examination at the opening of the first term on credentials, certifying to their age, character, scholarship and graduation, provided the subjects certified cover the entrance requirements. This certificate must give in detail, concerning each subject which the applicant has studied in the school, the length of time in weeks, the number of recitations per week, and the grade or mark indicating his proficiency. A blank for this certificate may be had upon application to the Registrar.

In the matter of admission to the Freshman Class by certificate, no credit will be given for work done in a secondary school unless the applicant is a graduate of the school.

It is highly important that the applicant send his certificate, properly filled out, to the Registrar in advance. If this cannot be done, he should bring it with him at the opening of the session.

(B) ADMISSION BY EXAMINATION.

Any or all scholarship requirements may be met by passing the entrance examinations. The applicant must, in advance, send or hand to the Registrar a list of the subjects in which he wishes to be examined. Entrance examinations for 1916-17 will be held September 25, 26, 1916, according to the following schedule:

Hour	*September 25*	*September 26*
8 to 10	Algebra	Geometry
10 to 12	English	Physics
1 to 3	History	Chemistry
3 to 5	Civics	Modern Languages

The hours for other subjects will be arranged upon application.

(C) ADMISSION TO THE FRESHMAN CLASS ON COMPLETION OF THE WORK OF THE FIRST YEAR OF A SHORT COURSE.

Students admitted, with eight entrance units, to the two-year elective Course in Agriculture, or to the two-year Course in Engineering, will, upon completion of the first year's work, be entitled to six additional entrance units, making a total of fourteen. If the fourteen include the prescribed units in English, Algebra and Plane Geometry, such students will be eligible for admission to the Freshman class. In estimating entrance units secured in this way, six "term hours" are counted as one entrance unit.

ADMISSION TO SHORT COURSES.

1. For admission to the *Elective Two-year Course in Agriculture* and to the *Two-year Course in Engineering*, the applicant must present eight units, of which English, 2 units, and Algebra to simultaneous equations, 1 unit, are prescribed. To make up the total of eight units, the applicant must present five additional units from the subjects under list A and B above.

2. For admission to the *Prescribed Two-year Course in Agriculture*, the *Two-year Course for Electricians*, the *Two-year Course for Power Plant Operators*, the *Two-year Course in Textile Engineering*, the *Two-year Course in Telephony* and the *Two-year Course in Agricultural Engineering*, the applicant must present a satisfactory certificate of proficiency in English Grammar and Composition, and in Algebra to simultaneous equations; or must pass an entrance examination in these subjects.

ADMISSION WITH ADVANCED STANDING.

Admission with advanced standing may be secured by examination or by transfer of credits from a college of approved standing. The applicant for advanced standing by transfer must present a certified record of work done in the institution from which he comes, accompanied by a certificate of honorable discharge.

College credit will not be given for work presented to satisfy the entrance requirements.

ADMISSION OF SPECIAL STUDENTS.

Young men over twenty-one years of age, who cannot satisfy all the requirements for admission and are not candidates for a degree, will be permitted to enter the College upon submitting satisfactory evidence that they are prepared to profit by the studies they desire to take. This evidence must be submitted on the official entrance blank and mailed in advance to the Registrar. In order to be admitted to the work of any department, a special student must have the consent of the head of the department; and his course of study, as a whole, must be submitted to the Dean of the College for approval. In special cases the Dean may admit as special students young men between eighteen and twenty-one years of age.

A special student, who may desire to become a candidate for graduation, must satisfy the entrance requirements and obtain the consent of the Dean.

ADVISERS FOR FIRST-YEAR STUDENTS.

Each student on entering College will be assigned to a member of the teaching staff, who will act as his adviser and give him helpful counsel in matters pertaining to his work or to any feature of his college life.

REGISTRATION.

Upon arrival at the College, young men intending to enter will report at once to the Commandant for temporary assignment to quarters, and for full information in regard to registration.

Tuesday, Wednesday and Thursday, September 26, 27 and 28, devoted to the registration of students. Recitations will begin Friday, September 29.

REGISTRATION FEE.

Every student is required to register when he first enters the College and thereafter at the beginning of each term.

Upon registering for the first time he is charged a registration fee of three dollars. He pays this fee only once unless his connection with the College should later be severed; in that case he must pay the registration fee again in order to re-enter.

LATE REGISTRATION.

All students, except those registering for the first time, who do not complete their registration on the days set for that purpose, will be charged a fee of three dollars for late registration.

In the case of irregular and special students, registration is not complete until their assignment cards are returned, properly signed, to the Registrar.

EXPENSES FOR THE SESSION.

The fixed charges are:

Trust fund, payable on entrance	$ 5 00	
Incidental fee, payable on entrance	5 00	
Medical fee, payable on entrance	8 00	
Laboratory fee, payable on entrance	1 25	
Maintenance, First Term, payable on entrance	80 00	
		$ 99 25
Maintenance, Second Term, payable February 3	$80 00	
Laboratory fee, payable February 3	1 25	
		81 25
		$180 50

Other necessary expenses are:

Uniform, payable on entrance, about	$30 00	
Books, from $15 to	20 00	
		$ 50 00
Total		$230 50
For Freshmen in the engineering courses, drawing instruments, about		$ 10 00

The student will need at entrance at least $160.

Payment should be made by bank exchange, money order, or in cash. Personal checks will not be accepted.

The trust fund is to pay for property damaged or destroyed, and will be returned to the parent if there is no charge of this kind against the student, or if he is not otherwise indebted to the College. If charges amounting to fifty per cent of the trust fund deposit are made against a student during the session, he will be required to make an additional deposit covering the total charges made against him to that date.

The incidental fee is used for sundry incidental expenses, such as printed forms, examination books, etc.

The medical fee covers the professional services of the College Surgeon and of the hospital staff.

Incidental, medical, registration, and laboratory fees will in no case be refunded.

Maintenance includes board, fuel, washing, lights, room rent, single bedsteads, mattresses, tables, washstands, chairs.

Each student is required to keep on hand a supply of bed clothing for single beds, towels, etc. For winter he should provide himself with an overcoat and a mackintosh.

Students are required to take their meals at the Mess Hall.

Payment for each term must be made in advance. A student entering during a term will be charged maintenance for the remainder of that term only.

A student once entering for a term, and having paid for that term, or the balance of it, forfeits all claim to said payment in case of voluntary withdrawal from the College before the expiration of said term, except in case of sickness disqualifying him for the discharge of his duties for the rest of the term. When such sickness takes place at the College, it must be attested by the College Surgeon before the student can receive the balance of his maintenance fund.

The expenses of a graduate student are $5.00 for material used in laboratories and practical work, and $8.00 for medical fee, with charge for maintenance as above.

Day students pay $18, to cover trust fund, incidental fee, and medical fee as above.

UNIFORM.

Every cadet must keep on hand in good condition: 1 regulation blouse, 2 pairs regulation gray trousers, 2 pairs regulation white trousers, 1 regulation cap, 1 regulation hat, 6 regulation shirts, 2 regulation white shirts, 6 standing white collars, 6 turned down white collars, 1 pair black shoes, 4 pairs white gloves, 1 regulation tie, 1 regulation belt, 1 working suit, 1 pair regulation leggins, 1 pair regulation olive drab cotton breeches, 1 set collar ornaments; and an ample supply of underwear.

In addition, each student must have, for shop and field practice, a working suit of drilling, which mosts from $1.50 to $2.50.

The blouses, trousers, caps and hats are made by contract, and students are required to purchase from the contractors, in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons, and may secure the best material for the lowest price. All parts of the equipment are carefully inspected by the Commandant of Cadets, in order that good fits and satisfactory materials may be secured.

By means of the contract system not only is there a saving effected, but there is also furnished a guarantee that the material will be of the requisite pattern and quality. For the efficient enforcement of the arrangements entered into, the College authorities require that each student make his purchases through the machinery provided at the College, and that a deposit sufficient to cover the purchase price of the equipment be placed in the hands of the Treasurer when the cadet matriculates. No suit will be ordered until such deposit has been made.

It should be distinctly realized that this clothing is not an additional expense, but that it is the cheapest clothing that cadets can wear. It is very neat in appearance, and is serviceable and durable.

The other regulation articles may be purchased at the exchange store mentioned below.

CADET EXCHANGE—BOOKS AND OTHER SUPPLIES.

The College runs an exchange store for the purpose of supplying necessary articles to students at the lowest possible cost. The store carries in stock, books, stationery, drawing instruments, regulation articles of the uniform, toilet articles, etc. These goods are sold at prices just sufficient to cover cost and operating expenses.

STUDENT LABOR.

The Legislature has provided a fund by which a limited number of industrious young men may defray a part of their expenses by working for the College at such times as their regular duties will permit.

The rate of pay is made to depend upon the character of the work, and the manner in which it is performed. A student should not count upon earning more than $40 a session.

COURSE IN SCIENCE.

The Course in Science is planned to meet the needs of young men whose interests lie in the field of applied bacteriology, botany, chemistry, entomology, or of zoology. Graduates in this Course should be qualified to enter the service of the State or Federal Department of Agriculture, or of Experiment Stations. This Course also affords excellent preparation for the study of medicine.

The work of the Freshman and Sophomore years is prescribed. The studies of the Junior and Senior years are arranged in five groups, with the view of permitting the student to specialize in any one of the five subjects named above. As will be noted, certain subjects are common to all the groups. The choice of groups is to be made by April 15 of the Sophomore year.

X.—COURSE IN SCIENCE.

FRESHMAN YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Biology 103 Botany	3	2	Biology 104 Botany	3	2
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
English 103 Composition and Rhetoric	3	0	Drawing 116 Mechanical	0	2
History 101 Modern Europe	3	0	Drawing 118 Freehand	0	4
Mathematics 103 Trigonometry	3	0	English 104 Composition and Rhetoric	3	0
Physics 101 Principles of Physics	2	2	History 102 Modern Europe	3	0
			Physics 102 Principles of Physics	2	2
	17	6		15	8

SOPHOMORE YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Biology 201 Zoology	2	2	Biology 202 Zoology	2	2
Chemistry 201 Organic	2	4	Chemistry 202 Organic	3	4
Chemistry 209 Geology	3	2	English 202 Literature	3	0
English 201 Literature	3	0	Entomology 202 Economic	2	2
Entomology 201 Systematic	2	2	Military Science 202 Drill Regulations	1	0
*Modern Language 213 German	3	0	*Modern Language 214 German	3	0
	15	10		14	8

Required in all Groups.

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agronomy 301 Soils	3	4	Agronomy 302 Farm Crops	4	2
Chemistry 309 Analytical	1	4	Chemistry 302 Agricultural	2	2
Economics 303 Fundamental Principles	3	0	Economics 304 Rural Economics	3	0
English 301 Argumentation	1	0	English 302 Argumentation	1	0
Modern Language 323	2	0	Military Science 302 Tactics	1	0
			Modern Language 324	2	0
	10	8		13	4

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Economics 405 Credit and Marketing	3	0	Economics 406 Rural Problems	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0			
	5	0		4	0

*For the session 1916-17, this subject will be replaced by second-year German (2-0) and History 201, 202, Modern Europe (3-0).

GROUP 1. BACTERIOLOGY.

JUNIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Biology 309 General Bacteriology	2	4	Biology 310 General Bacteriology	2	4
English 311 Literature	3	0	English 312 Literature	3	0
	5	4		5	4

SENIOR YEAR.

Biology 403 Plant Diseases	2	4	Biology 406 Plant Diseases	2	4
Biology 407 Systematic Botany	2	4	Biology 408 Systematic Botany	2	4
Chemistry 421 Advanced Agricultural Chemistry	2	8	Chemistry 422 Advanced Agricultural Chemistry	2	8
	6	16		6	16

GROUP 2. BOTANY.

JUNIOR YEAR.

Biology 311 Plant Physiology	2	4	Biology 312 Plant Physiology	2	4
English 311 Literature	3	0	English 312 Literature	3	0
	5	4		5	4

SENIOR YEAR.

Biology 403 Plant Diseases	2	4	Biology 406 Plant Diseases	2	4
Biology 407 Systematic Botany	2	4	Biology 408 Systematic Botany	2	4
Chemistry 421 Advanced Agricultural Chemistry	2	8	Chemistry 422 Advanced Agricultural Chemistry	2	8
	6	16		6	16

GROUP 3. ZOOLOGY.

JUNIOR YEAR.

Biology 313 Animal Histology	2	4	Biology 314 Embriology	2	4
English 311 Literature	3	0	English 312 Literature	3	0
	5	4		5	4

SENIOR YEAR.

Biology 411 Advanced Invertebrate Zoology	2	4	Biology 412 Advanced Invertebrate Zoology	2	4
Biology 413 Advanced Vertebrate Zoology	2	4	Biology 414 Advanced Vertebrate Zoology	2	4
Chemistry 421 Advanced Agricultural Chemistry	2	8	Chemistry 422 Advanced Agricultural Chemistry	2	8
	6	16		6	16

GROUP 4. CHEMISTRY.

JUNIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Biology 313 Animal Histology	2	4	Biology 322 Sanitary Bacteriology	2	4
Chemistry 321 Physical Chemistry	2	4	Chemistry 322 Qual. and Quan. Analysis	1	4
	4	8		3	8

SENIOR YEAR.

Biology 421 Sanitary Bacteriology	2	4	Chemistry 410 Water Analysis	0	4
Chemistry 405 History of Chemistry	1	0	Chemistry 422 Advanced Agricultural Chemistry	2	8
Chemistry 421 Advanced Agricultural Chemistry	2	8	Civil Engineering 428 Sewerage and Filtration	3	4
English 421 Literature	2	0	English 422 Literature	2	0
	7	12		7	16

GROUP 5. ENTOMOLOGY.

JUNIOR YEAR.

Biology 313 Animal Histology	2	4	Biology 314 Embryology	2	4
Entomology 311 Advanced Systematic	2	2	Entomology 312 Advanced Systematic	2	2
	4	6		4	6

SENIOR YEAR.

Biology 403 Plant Diseases	2	4	Biology 406 Plant Diseases	2	4
English 421 Literature	2	0	English 422 Literature	2	0
Entomology 403 Advanced Economic	1	4	Entomology 404 Advanced Economic	2	2
*Horticulture 401 Pomology	3	2	Entomology 406 Advanced Economic	0	2
			*Agronomy 408 Advanced Soils	2	2
	8	10		8	10
*Or Entomology 405 Fruit Insects	2	4	*Or Entomology 408 Apiculture	2	2

THE SCHOOL OF AGRICULTURE.

FACULTY.

WILLIAM BENNETT BIZZELL, M. A., D. C. L.,
President.

E. J. KYLE, M. S. A.,
Dean.

CHARLES PURYEAR, M. A., C. E., LL. D.,
Dean of the College,
Professor of Mathematics.

M. FRANCIS, D. V. M.,
Professor of Veterinary Medicine.

E. J. KYLE, M. S. A.,
Professor of Horticulture.

C. P. FOUNTAIN, A. M.,
Professor of English.

O. M. BALL, M. A., Ph. D.,
Professor of Biology.

O. F. CHASTAIN,
Professor of History.

J. OSCAR MORGAN, M. S. A., Ph. D.,
Professor of Agronomy.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering

M. L. HAYES, A. M.,
Professor of Agricultural Education.

C. B. CAMPBELL, Ph. D.,
Professor of Modern Languages.

J. W. RIDGWAY, M. S.,
Professor of Dairy Husbandry.

W. T. WRIGHT, A. B.,
Professor of Physics.

T. L. KIBLER, Ph. D.,
Professor of Economics.

JAMES R. HILL, Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics, Commandant of Cadets.

R. P. MARSTELLER, D. V. M.,
Professor of Veterinary Medicine.

E. C. GEE, B. S.,
Professor of Agricultural Engineering.

J. H. FOSTER, B. S., M. F.,
Professor of Forestry.

R. F. SMITH,
Associate Professor of Mathematics.

W. H. THOMAS, B. Lit.,
Associate Professor of English.

A. T. POTTS, B. S.,
Associate Professor of Horticulture.

J. D. BLACKWELL, B. Pd., B. S. A.,
Associate Professor of Agricultural Education.

S. A. McMILLAN, B. S.,
Associate Professor of Agronomy.

F. W. BELL, B. S. A.,
Associate Professor of Animal Husbandry.

L. B. BURK, B. S. A.,
Associate Professor of Animal Husbandry.

N. M. McGINNIS, B. S.,
Associate Professor of Horticulture.

C. A. WOOD, B. S. A.,
Associate Professor of Agronomy.

F. HENSEL, M. S.,
Associate Professor of Horticulture.

S. W. BILSING, B. S., M. A.,
Associate Professor of Entomology.

COURSES OF STUDY.

In the School of Agriculture there are offered the following Courses:

Regular four-year Course in Agriculture.
Prescribed two-year Course in Agriculture.
Elective two-year Course in Agriculture.
Two-year Course in Agricultural Engineering.
Summer short Course for Farmers.

REGULAR COURSE.

The regular four-year Course has as its main object the preparation of young men for the business of farming, for the pursuit of scientific investigation along some line of agriculture, for becoming county demonstration agents, or extension workers, and for teaching in the high schools and agricultural colleges. It also affords excellent preparation for young men who intend to follow business pursuits. Systematic training is given in the sciences of biology, chemistry, entomology and physics, which are fundamental to the study of scientific agriculture, and in technical subjects, covering the main divisions of agriculture, including agricultural engineering, agronomy, animal husbandry, dairy husbandry and horticulture. In this Course the work of the Freshman and Sophomore years is prescribed. As shown in the curriculum, the work of the Junior and Senior years is arranged so as to provide for a choice by the student of one of eleven groups of studies. This arrangement affords the student a wide range of subjects from which to choose his major work, permitting him to specialize in agricultural education, agricultural engineering, agronomy, animal husbandry, biology, entomology, horticulture, or in landscape art.

As will be noted, certain studies are common to all the groups; and in each group a part of the work is elective; see lists A and B, page 47. The choice of groups is to be made by April 15 of the Sophomore year.

PRESCRIBED TWO-YEAR COURSE IN AGRICULTURE.

This Course is intended for young men who wish to spend one or two years in preparing to go back to the farm and apply the more important scientific methods of farming which have been worked out in recent years. To this end the Course is made highly practical and technical, and includes in abbreviated form much of the technical work required in the four-year Course. The studies are all prescribed, and the student will not be allowed to take any studies not listed in the Course, except that if he has credit for a subject so listed, he may, upon application, make an approved substitution. Students who have had approved farm experience will, upon completion of this Course, be awarded certificates.

ELECTIVE TWO-YEAR COURSE IN AGRICULTURE.

The purpose of this Course is twofold: to young men not able to spend four years in College, it offers the opportunity of getting a considerable acquaintance with scientific methods in agriculture; to the student who presents only eight entrance units, it affords preparation to enter the Freshman class in one year.

The studies in this Course are elective, but are to be chosen under the advice and direction of a member of the Faculty designated for the purpose. Students who have had approved farm experience, will, upon completion of the Course, be awarded certificates.

TWO-YEAR COURSE IN AGRICULTURAL ENGINEERING.

Special machinery and equipment are playing an important part in the development of the agricultural interests of the State.

This Course is designed, primarily, to meet the needs of students who have not had the advantage of a high school training and who wish to specialize in the engineering side of agriculture. It will especially fit students for the technical side of the farm implement and equipment business. Students who have an aptitude for mechanics and who are interested in agriculture, will find this Course well suited to their needs.

SUMMER SHORT COURSE FOR FARMERS.

This Course is planned especially for the practical farmer who has not had the opportunity of taking a regular agricultural Course.

The work includes lectures, demonstrations and practice in soils, fertilizers, farm crops, and farm management; judging live stock, feeding live stock, and breeding live stock; the care and handling of milk, the manufacturing of products from milk, the management and operation of creameries; plant propagation, vegetable gardening and orcharding; construction and operation of farm machinery; insects and plant diseases; veterinary science; cotton classing; terracing and good roads; poultry; domestic science, including lectures on cooking and sewing.

The Course is given during the latter part of July so as to meet the convenience of the greatest number of farmers of the State. The work covers one week.

There are no entrance requirements, and the expenses have been reduced to a minimum.

For detailed information, address the Dean of the School of Agriculture, College Station, Texas.

I.—COURSE IN AGRICULTURE.

FRESHMAN YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Agronomy 101 El. Crop Production	2	2	Animal Husbandry 102 Market Types	0	4
Animal Husbandry 101 Market Types	0	4	Biology 102 Botany	3	2
Biology 101 Botany	3	2	Chemistry 102 Inorganic	3	2
Chemistry 101 Inorganic	3	2	Dairy Husbandry 102 El. Dairying	2	2
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Physics 101 Principles of Physics	2	2	Physics 102 Principles of Physics	2	2
	13	12		13	12

SOPHOMORE YEAR.

Animal Husbandry 201 Farm Poultry	1	2	Animal Husbandry 202 Breed Types	2	2
Biology 201 Zoology	2	2	Biology 202 Zoology	2	2
Chemistry 209 Geology	3	2	Chemistry 206 Organic	2	2
English 201 Literature	3	0	English 202 Literature	3	0
Horticulture 201 Plant Propagation and Orcharding	3	2	Horticulture 202 Vegetable Gardening	2	2
Veterinary Medicine 201 Anatomy and Physiology	2	2	Military Science 202 Drill Regulations	1	0
			Veterinary Medicine 202 Non-infectious Diseases	2	2
	14	10		14	10

Required in all Groups.

JUNIOR YEAR.

Agronomy 301 Soils	3	4	Agronomy 302 Farm Crops	4	2
Chemistry 309 Analytical	1	4	Chemistry 304 Agricultural	2	2
English 301 Argumentation	1	0	English 302 Argumentation	1	0
			Military Science 302 Tactics	1	0
	5	8		8	4

SENIOR YEAR.

Economics 401 Fundamental Principles	3	0	Agronomy 402 Farm Management	3	4
English 401 Public Speaking	1	0	Economics 402 Rural Economics	3	0
Military Science 401 Tactics	1	0	English 402 Public Speaking	1	0
	5	0		7	4

GROUP 1. AGRICULTURAL CHEMISTRY.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 305 History of Chemistry	1	0	*Agronomy 304 Soil Mapping	1	4
Chemistry 321 Physical Chemistry	2	4	Chemistry 322 Qual. and Quan. Analysis	1	4
Dairy Husbandry 305 Milk Inspection	1	2	Biology 306 General Bacteriology	1	4
*Entomology 301 Systematic	2	2			
	6	8		3	12

*Or one subject from List A.

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Animal Husbandry 401 Animal Nutrition	3	2	Chemical Engineering 406 Microchemical Methods	0	2
Chemistry 421 Advanced Agricultural	2	8	Chemistry 422 Advanced Agricultural	2	8
	5	10		2	10

And one of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agronomy 401 Plant Breeding	3	2	Agronomy 408 Advanced Soils	2	2
Biology 401 Advanced Bacteriology	2	4	Biology 402 Soil Bacteriology	2	4
One subject from List B.			One subject from List B.		

GROUP 2. AGRICULTURAL EDUCATION (a).

(For students not expecting permanent certificate.)

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Education 301 Educational Psychology	3	0	Agricultural Education 304 High School Problems	3	0
Biology 303 Plant Physiology	2	4	*Entomology 302 Economic	2	2
*Entomology 301 Systematic	2	2	Horticulture 308 Floriculture	2	2
	7	6		7	4

*Or one subject from List A.

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 High School Agriculture	3	0
Animal Husbandry 401 Animal Nutrition	3	2	Horticulture 402 Experimental Horticulture	2	4
Mechanical Engineering 417 Woodshop	0	4	Mechanical Engineering 418 Woodshop	1	4
Textile Engineering 417 Cotton Classing	0	2			
	6	8		6	8

And one of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Engineering 407 Farm Motors	2	4	Forestry 402 Wood Technology	2	2
Forestry 401 Dendrology	3	0	Horticulture 408 Floriculture	2	2
One subject from List B.			One subject from List B.		

GROUP 3. AGRICULTURAL EDUCATION (b).

(For students expecting permanent certificate.)

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agricultural Education 301... Educational Psychology	3	0	Agricultural Education 302... Methods of Teaching	3	0
Agricultural Education 303.... Administration of Schools	3	0	Agricultural Education 304... High School Problems	3	0
Textile Engineering 317...... Cotton Classing	0	2	*Entomology 302 .... Economic	2	2
*Entomology 301 .... Systematic	2	2			
	8	4		8	2

*Or one subject from List A.

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Education 403... Rural Education	3	0	Agricultural Education 402... High School Agriculture	3	0
Agricultural Education 405... Vocational Education	3	0	Agricultural Education 404... Agri. Extension and Dem.	3	0
Animal Husbandry 401....... Animal Nutrition	3	2			
Mechanical Engineering 417... Woodshop	0	4			
	9	6		6	0

And one of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Engineering 407.. Farm Motors	2	4	Forestry 402 .... Wood Technology	2	2
Forestry 401 .... Dendrology	3	0	Horticulture 408 .... Floriculture	2	2
One subject from List B.			One subject from List B.		

GROUP 4. AGRICULTURAL ENGINEERING.

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Engineering 301.. Farm Machinery	2	2	Agricultural Engineering 302.. Repair of Farm Machinery	1	4
Agricultural Engineering 303.. Farm Buildings	2	4	Agricultural Engineering 306.. Farm Motors	2	4
*Civil Engineering 319....... Trigonometry and Surveying	3	4	*Agricultural Engineering 304. Drainage	2	2
	7	10		5	10

*Or one subject from List A.

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Engineering 401.. Tractors	1	4	Agricultural Engineering 402.. Automobiles	2	4
Agricultural Engineering 405.. Pumps and Power Problems	2	0	Agricultural Engineering 408.. Terracing	0	2
Agricultural Engineering 409.. Farm Concrete	1	4	Chemistry 418 .... Technical Analysis	1	3
Horticulture 411 .... Spraying	1	4			
	6	12		3	9

And one of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Engineering 403.. Irrigation	2	2	Agricultural Engineering 404.. Experimental Agri. Engineering	0	6
One subject from List B.			One subject from List B.		

GROUP 5. AGRONOMY.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
*Agricultural Engineering 301. Farm Machinery	2	2	Agricultural Engineering 304.. Drainage	2	2
Civil Engineering 319........ Farm Surveying	3	4	*Agronomy 304 .... Soil Mapping	1	4
Entomology 301 .... Systematic	2	2	Entomology 302 .... Economic	2	2
	7	8		5	8

*Or one subject from List A.

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agronomy 401 .... Plant Breeding	3	2	Agronomy 408 .... Advanced Soils	2	2
Agronomy 405 .... Use of Fertilizers and Manures	2	2	Agronomy 404 .... Marketing Problems	3	2
Animal Husbandry 401....... Animal Nutrition	3	2			
	8	6		5	4

And one of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Education 401... Methods of Teaching	3	0	Agricultural Education 402... High School Agriculture	3	0
Agronomy 403 .... Cost of Accounting	2	2	Agronomy 406 .... Advanced Farm Management	1	4
Forestry 401 .... Dendrology	3	0	Forestry 402 .... Wood Technology	2	2
One subject from List B.			One subject from List B.		

GROUP 6. ANIMAL HUSBANDRY.

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Animal Husbandry 301....... Hist. and Development of Breeds	2	2	Animal Husbandry 302....... Animal Breeding	2	2
Biology 301 .... Embryology of Domestic Animals	2	4	*Entomology 306 .... Animal Parasites	2	2
*Entomology 301 .... Systematic	2	2	Veterinary Medicine 302...... Obstetrics	2	2
	6	8		6	6

*Or one subject from List A.

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Animal Husbandry 401....... Animal Nutrition	3	2	Animal Husbandry 402....... Live Stock Feeding	3	2
Animal Husbandry 403....... Advanced Judging	1	4	Animal Husbandry 404....... Live Stock Management	2	2
Veterinary Medicine 401...... Infectious Diseases	2	0			
	6	6		5	4

And one of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Education 401... Methods of Teaching	3	0	Agricultural Education 402... High School Agriculture	3	0
Agricultural Engineering 411.. Farm Machinery	2	2	Agricultural Engineering 406.. Farm Motors	2	4
Animal Husbandry 405....... Herd Book Study	0	4	Agronomy 406 .... Advanced Farm Management	1	4
Animal Husbandry 407....... Poultry Feeding and Management	2	2	Animal Husbandry 408....... Incubation and Brooding	2	2
One subject from List B.			One subject from List B.		

GROUP 7. BIOLOGY.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Biology 301 Embryology of Domestic Animals	2	4	Biology 302 Rural Sanitation	2	4
Biology 303 Plant Physiology	2	4	Biology 304 Plant Ecology	2	4
*Entomology 301 Systematic	2	2	*Entomology 302 Economic	2	2
	6	10		6	10

*Or one subject from List A.

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Biology 401 Advanced Bacteriology	2	4	Biology 402 Soil Bacteriology	2	4
Biology 403 Plant Diseases	2	4	Biology 404 Plant Diseases	1	4
Biology 405 Plant Nutrition	2	4			
	6	12		3	8
And one subject from List B.			And one subject from List B.		

GROUP 8. DAIRY HUSBANDRY.

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
*Agricultural Engineering 311. Dairy Machinery	1	2	Animal Husbandry 302 Animal Breeding	2	2
Biology 301 Embryology of Domes. Animals	2	4	Biology 306 General Bacteriology	1	4
Dairy Husbandry 301 Technology of Milk	2	0	*Dairy Husbandry 302 Dairy Manufactures	2	4
Entomology 301 Systematic	2	2			
	7	8		5	10

*Or one subject from List A.

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Animal Husbandry 401 Animal Nutrition	3	2	Dairy Husbandry 402 Milk Production	3	2
Biology 401 Advanced Bacteriology	2	4	Dairy Husbandry 404 Seminar	2	0
Dairy Husbandry 401 Herd Book Study	0	4			
Dairy Husbandry 405 Milk Inspection	1	2			
	6	12		5	2

And one of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 High School Agriculture	3	0
Dairy Husbandry 403 Factory Management	2	2	Agricultural Engineering 406 Farm Motors	2	4
Veterinary Medicine 401 Infectious Diseases	2	0	Chemistry 424 Dairy Chemistry	2	4
One subject from List B.			Veterinary Medicine 402 Obstetrics	2	2
			One subject from List B.		

GROUP 9. ENTOMOLOGY.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Biology 303 Plant Physiology	2	4	Entomology 304 Apiculture	2	2
Entomology 301 Systematic	2	2	Entomology 302 Economic	2	2
*Forestry 301 Principles of Forestry	2	2	*Horticulture 302 Plant Breeding	2	2
	6	8		6	6

*Or one subject from List A.

SENIOR YEAR.

Entomology 401 Advanced Systematic	2	2	Entomology 402 Advanced Systematic	1	4
Entomology 403 Adv. Economic and Experiment.	1	4	Entomology 404 Advanced Economic	2	2
*Entomology 405 Fruit Insects	2	4			
	5	10		3	6
*Or Horticulture 401 Pomology	3	2			

And one of the following:

Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 High School Agriculture	3	0
Forestry 401 Dendrology	3	0	Forestry 402 Wood Technology	2	2
One subject from List B.			One subject from List B.		

GROUP 10. HORTICULTURE.

JUNIOR YEAR.

Agricultural Engineering 307 Farm Motors	2	4	Horticulture 302 Plant Breeding	2	2
Entomology 301 Systematic	2	2	Entomology 302 Economic	2	2
*Horticulture 301 Spraying	1	4	*Horticulture 304 Nut Culture	2	2
	5	10		6	6

*Or one subject from List A.

SENIOR YEAR.

Biology 403 Plant Diseases	2	4	Biology 404 Plant Diseases	1	4
Entomology 405 Fruit Insects	2	4	Horticulture 402 Experimental Horticulture	2	4
Horticulture 401 Pomology	3	2			
	7	10		3	8

And one of the following:

Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 High School Agriculture	3	0
Forestry 401 Dendrology	3	0	Forestry 402 Wood Technology	2	2
Horticulture 405 Bush and Vine Fruits	2	2	Horticulture 408 Floriculture	2	2
One subject from List B.			Horticulture 410 Introduction to Landscape Art	2	0
			One subject from List B.		

GROUP 11. LANDSCAPE ART.

JUNIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Civil Engineering 319 Trigonometry and Surveying	3	4	Drawing 316 Water Color	0	4
Drawing 315 Mechanical	0	2	Forestry 302 Sylviculture	2	2
Horticulture 307 Introduction to Landscape Design	2	0	Horticulture 308 History of Landscape Art	2	0
*Entomology 301 Systematic	2	0	*Entomology 302 Economic	2	2
	7	6		6	8

*Or one subject from List A.

SENIOR YEAR.

Agricultural Engineering 413 Farm Buildings	2	4	Horticulture 408 Floriculture	2	2
Architecture 419 Theory of Design	1	0	Horticulture 416 Landscape Design	3	2
Horticulture 407 Ornamentals	2	2			
Horticulture 415 Landscape Design	3	2			
	8	8		5	4

And one of the following:

Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 High School Agriculture	3	0
Agronomy 403 Cost Accounting	2	2	Forestry 402 Wood Technology	2	2
Forestry 401 Dendrology	3	0	Horticulture 402 Experimental	2	4
One subject from List B.			One subject from List B.		

LIST A.

JUNIOR ELECTIVES.

The student may elect one line of the following in place of the subjects marked with a star in the preceding curricula.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
English 311 Literature	3	0	English 312 Literature	3	0
Forestry 301 Principles of Forestry	3	0	Forestry 302 Sylviculture	2	2
History 301 Industrial History of England	3	0	History 302 Industrial History of U. S.	3	0
Mod. Language 311, 313 or 315 French, German or Spanish	3	0	Mod. Language 312, 314 or 316 French, German or Spanish	3	0

LIST B.

SENIOR ELECTIVES COMMON TO ALL GROUPS.

English 421 Literature	2	0	English 422 Literature	2	0
History 401 Industrial History of England	3	0	History 402 Industrial History of U. S.	3	0
Mod. Language 421, 423 or 425 French, German or Spanish	2	0	Mod. Language 422, 424 or 426 French, German or Spanish	2	0

C.—PRESCRIBED TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Agronomy 23 Soils	3	2	Agronomy 24 El. Crop Production	3	2
Animal Husbandry 21 Market Types	0	6	Animal Husbandry 22 Breeds and Types	2	2
Biology 11 Zoology	3	2	Biology 12 Botany	3	2
English 11 Grammar, Composition	3	0	Dairy Husbandry 22 Elementary Dairying	2	2
Horticulture 21 Plant Propagation	3	2	English 12 Grammar, Composition	3	0
Textile Engineering 17 Cotton Classing	0	2	Horticulture 22 Vegetable Gardening	3	2
	12	14		16	10

SECOND YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agricultural Engineering 53 Farm Machinery and Motors	2	2	Agronomy 52 Farm Eqpt. and Mgm.	3	2
Agricultural Engineering 55 Irrigation and Drainage	1	4	Animal Husbandry 52 Breeding	1	2
Animal Husbandry 55 Feeding	2	2	Animal Husbandry 54 Poultry	3	2
Dairy Husbandry 53 Farm Dairying	2	4	English 52 Practical Composition	3	0
English 51 Practical Composition	3	0	Entomology 54 Economic	2	2
Horticulture 53 Tree and Vine Fruits	3	2	Veterinary Medicine 52 Animal Diseases	3	2
	13	14		15	10

D.—ELECTIVE TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

Eighteen term hours each term from the following:

First Term.	Hours per week. Rec.	Pr.
Agricultural Engineering 15 Irrigation and Drainage	1	4
Agricultural Engineering 13 Farm Machinery and Motors	2	2
Agronomy 21 Elementary Agriculture	3	2
Agronomy 23 Soils	3	2
Biology 11 Zoology	3	2
Dairy Husbandry 23 Farm Dairying	2	2
Drawing 15 Mechanical	0	2
Drawing 17 Freehand	0	2
English 21 Practical Composition	3	0
Mathematics 11 Plane Geometry	3	0
Mechanical Engineering 37 Shop Work	0	4
Physics 11 Elementary	3	2

Second Term.	Hours per week. Rec.	Pr.
Agronomy 22 Elementary Agriculture	3	2
Agronomy 26 Farm Crops	3	2
Biology 12 Botany	3	2
Drawing 16 Mechanical	0	2
Drawing 18 Freehand	0	2
Entomology 24 Economic	2	2
English 22 Practical Composition	3	0
Forestry 12 Elementary Forestry	3	0
Mathematics 12 Plane Geometry	3	0
Mathematics 16 Algebra	3	0
Mechanical Engineering 38 Shop Work	0	4
Physics 12 Elementary	3	2
Veterinary Medicine 12 Animal Diseases	3	2

SECOND YEAR.

Eighteen term hours each term from the following:

Agricultural Engineering 51 Irrigation and Drainage	1	4
Agricultural Engineering 53 Farm Machinery and Motors	2	2
Agronomy 53 Soils	3	2
Animal Husbandry 51 Market Types	0	6
Animal Husbandry 53 Breed Types	2	2
Biology 51 Zoology	3	2
Biology 53 Botany	2	2
Chemistry 51 Practical	3	2
Dairy Husbandry 53 Farm Dairying	2	2
Entomology 51 Systematic	2	2
Horticulture 51 Plant Propagation	3	2
Horticulture 53 Tree and Vine Fruits	3	2
Horticulture 55 Spraying	1	4

Agronomy 52 Farm Equipt. and Mgm.	3	2
Agronomy 54 El. Crop Production	3	2
Agronomy 56 Farm Crops	3	2
Animal Husbandry 52 Animal Breeding	1	2
Animal Husbandry 54 Farm Poultry	1	2
Animal Husbandry 56 Feeding	2	2
Biology 52 Botany	3	2
Biology 54 Botany	2	2
Dairy Husbandry 52 Elementary Dairying	2	2
Entomology 52 Economic	2	2
Forestry 52 Elementary Forestry	3	0
Horticulture 52 Vegetable Gardening	3	2
Horticulture 54 Plant Breeding	2	2
Horticulture 58 Nut Culture	2	2
Veterinary Medicine 52 Animal Diseases	3	2

M.—TWO-YEAR COURSE IN AGRICULTURAL ENGINEERING.

FIRST YEAR.

First Term.	Hours per week. Rec.	Hours per week. Pr.	Second Term.	Hours per week. Rec.	Hours per week. Pr.
Agricultural Engineering 25 Farm Machinery	2	2	Agricultural Engineering 26 Farm Motors	2	4
Agricultural Engineering 27 Farm Concrete	1	4	Agronomy 24 Farm Crops	3	2
Agronomy 23 Soils	3	2	Civil Engineering 24 Surveying	2	4
Drawing 15 Mechanical	0	2	Drawing 16 Mechanical	0	2
English 11 Grammar and Composition	3	0	English 12 Grammar and Composition	3	0
Mathematics 13 Shop Mathematics	4	0	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 23 Wood Shop	0	4	Mechanical Engineering 24 Forge	0	4
	13	14		13	16

SECOND YEAR.

First Term.	Hours per week. Rec.	Hours per week. Pr.	Second Term.	Hours per week. Rec.	Hours per week. Pr.
Agricultural Engineering 55 Irrigation and Drainage	1	4	Agricultural Engineering 56 Repairing Farm Machinery	1	4
Agricultural Engineering 57 Farm Buildings	2	4	Agricultural Engineering 58 Automobiles	2	4
Agricultural Engineering 59 Tractors	1	4	Agricultural Engineering 60 Testing	0	4
Dairy Husbandry 53 Farm Dairying	2	2	Animal Husbandry 56 Feeding	2	2
English 51 Practical Composition	3	0	Chemistry 52 Practical	3	4
Horticulture 55 Spraying Machinery	1	4	English 52 Practical Composition	3	0
	10	18		11	18

GRADUATE COURSE IN AGRICULTURE.

Graduate studies in the Course in Agriculture lead to the degree of Master of Science (in Agriculture). It is required for admission to this course that the candidate be a graduate of this College, or of some other institution approved by the Faculty.

The candidate must register with the Dean of the College, and must take the equivalent of 12 hours theory and 18 hours practice a week for one year in two or three of the following departments: agricultural engineering, agronomy, animal husbandry, biology, chemistry, dairy husbandry, entomology, horticulture, veterinary science; this course of study to be approved by a committee consisting of the Dean of the College and the heads of departments concerned. Unless he has credit in organic chemistry, he must take it as a part of this course.

He must present as a part of this work a thesis satisfactory to the committee. The thesis must be typewritten on paper 8½x11 inches.

In addition to the fees regularly charged, he must pay to the Business Manager a fee of two dollars to cover the cost of binding his thesis.

THE SCHOOL OF ENGINEERING.

FACULTY.

WILLIAM BENNETT BIZZELL, M. A., D. C. L.,
President.

D. W. SPENCE, C. E.,
Dean.

CHARLES PURYEAR, M. A., C. E., LL. D.,
Dean of the College and Professor of Mathematics.

D. W. SPENCE, C. E.,
Professor of Civil Engineering.

C. P. FOUNTAIN, A. M.,
Professor of English.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

O. F. CHASTAIN,
Professor of History.

J. B. BAGLEY, B. A.,
Professor of Textile Engineering.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

A. MITCHELL, B. C. E.,
Professor of Drawing.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

H. E. SMITH, M. E.,
Professor of Steam Engineering.

C. B. CAMPBELL, Ph. D.,
Professor of Modern Languages.

W. T. WRIGHT, B. S., A. B.,
Professor of Physics.

T. L. KIBLER, Ph. D.,
Professor of Economics.

R. L. MORRISON, M. A.,
Professor of Highway Engineering.

JAMES R. HILL, Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics and Commandant of Cadets.

R. ADELSPERGER, B. A., B. S.,
Professor of Architecture.

A. C. LOVE, B. S.,
Professor of Railway Engineering.

R. F. SMITH,
Associate Professor of Mathematics.

W. H. THOMAS, B. Lit.,
Associate Professor of English.

J. J. RICHEY, C. E.,
Associate Professor of Civil Engineering.

J. H. CANNON, B. S.,
Associate Professor of Electrical Engineering.

B. K. COGHLAN, B. S.,
Associate Professor of Highway Engineering.

O. B. WOOTEN, B. S.,
Associate Professor of Electrical Engineering.

D. C. MILLER, C. E.,
Associate Professor of Civil Engineering.

H. B. GORDON, M. S., Ph. D.,
Associate Professor of Chemistry.

COURSES OF STUDY.

In the School of Engineering there are offered the following Courses:

REGULAR FOUR-YEAR COURSES.

Course in Architectural Engineering.
Course in Architecture.
Course in Chemical Engineering.
Course in Civil Engineering.
Course in Electrical Engineering.
Course in General Engineering.
Course in Mechanical Engineering.
Course in Military Engineering.
Course in Textile Engineering.

SHORT COURSES.

Two-Year Course in Engineering.
Two-Year Course for Electricians.
Two-Year Course for Power Plant Operators.
Two-Year Course in Textile Engineering.
Two-Year Course in Telephony.
Winter Short Course for Road Supervisors and County Surveyors.
Reading Course in Highway Engineering.
Summer Course in Cotton Classing.

COURSES IN ARCHITECTURE AND ARCHITECTURAL ENGINEERING

"Architecture is essentially a fine art; but it is a fine art which may be expressed on so large a scale that a deep and comprehensive knowledge of engineering science is necessary to make its expression stable."

In the Course in Architecture, stress is laid on the æsthetic side, and in the Course in Architectural Engineering, on the constructive side of the profession.

Architectural practice has so grown in complexity that it is no longer economically feasible or, in the large sense, desirable, to combine the two abilities. In fact, it rarely happens that the aptitude for both is found in the same individual. Personal preference, then, will guide the student choosing architecture as his life-work in determining which phase of the profession to adopt. But, as both phases are more or less inter-related—the designer must have a certain minimum of constructive ability, and the engineer a certain minimum of designing ability,—it is desirable to make the Courses of study alike to a certain point. For this reason the Courses now offered are identical during the Freshman and Sophomore years, and students are thus carried to a point where a choice can be made with discretion.

The Course in Architecture is designed to prepare men to go into "general practice." While stress is put on design and the pleasing presentation in color, wash or line of the various *projets,* on period decoration, sculpture and painting, a ground-work is laid in the underlying principles of construction, sanitation, lighting, heating, ventilation and the kindred utilities which so frequently go into the modern building.

The Course in Architectural Engineering is designed to prepare men for the more technical and scientific aspect of the profession. The application of constructive principles is broader and more thorough, and the design practice is confined largely to the type of problems construction engineers are called upon to solve.

In both Courses considerable prominence is given to cultural subjects in order to fit the student to meet on an equal plane the type of men that will be his natural clients.

Both courses meet the standard requirements of the Association of American Schools of Architecture.

COURSE IN CHEMICAL ENGINEERING.

This Course is designed to prepare young men for technical work in those industries in which raw materials undergo a chemical change in the process of manufacture. Many fields are open to students trained in applied chemistry, and inquiries are continually being received asking for men capable of filling important positions in different industries. Some industries important to the present and future development of this State are those dealing with cottonseed products, sugar, leather, petroleum, cement, ceramics and iron and steel. The analytical chemistry given in the Course is sufficient to enable the graduate to engage in the work of a commercial plant or to enter an industrial plant as a control chemist. The control chemist repeatedly analyzes and evaluates the raw material used in the manufacture as well as the intermediate and finished products. It is through such control that industries of this kind have been made scientific. Pure food laws and other legal enactments calculated to protect the people against fraud have, of late years, greatly accentuated the importance of this work. At the same time enough work is given in general engineering practice to enable the graduate who enters the work as a control chemist to come in time to a full understanding and mastery of the industry in which he is engaged.

The fifth year's work, leading to the degree of chemical engineer, is designed to facilitate the transformation of the control chemist into the manager of an industrial plant, capable of adapting chemical processes to varying conditions and improving upon them as occasion demands.

COURSE IN CIVIL ENGINEERING.

The Course in Civil Engineering has for its object the preparation of young men for entrance upon professional practice in the fields of surveying, highway construction and maintenance; municipal engineering, as related to street location, paving, water supply, sewerage, sewage disposal works, street railroads, etc.; railway location, construction and maintenance; construction of levees and other protection works to guard against damage by overflows; irrigation and drainage engineering, the construction of canals and reservoirs, and the installation of pumping plants, filtration works, etc.; the design and construction of bridges, steel buildings, and masonry structures.

A thorough grounding in the underlying principles of engineering is given, together with the application of these principles to as many special lines as time will permit. Attention is given to drafting, to the preparation of contracts, specifications and estimates of cost, and to supervision of engineering work. The Course is divided into three groups.—(a) the Course in general civil engineering, (b) the Course in highway engineering, (c) the Course in municipal and sanitary engineering.

The Course in general civil engineering is designed for the student who wishes a general knowledge of civil engineering subjects, and also for the student who wishes a general engineering education, but does not expect to follow engineering as a profession but is using this course for training his reasoning powers. Graduates in this group are prepared for positions in any of the general civil engineering subjects.

Graduates in the group in highway engineering are prepared for positions in highway departments of States, counties, road districts and cities, with consulting engineers and contractors engaged in road and street work, and in engineering and sales departments of companies buying machinery and materials for highway work.

The Course in municipal and sanitary engineering is designed for the student who realizes that the rapid development of the State and the possible growth of the smaller towns will create in a very few years a demand for engineers trained along these lines.

In the Division of Highway Engineering the Department of Civil Engineering is meeting a constantly increasing demand along lines of great importance to the State. In addition to conducting classes in road building, and in street paving and improvement, members of the Highway Engineering staff deliver lectures and give advice on highway matters all over the State to as full extent as time and other duties permit. Exhibits for instruction in highway engineering are shown at the leading fairs and on demonstration trains for the purpose of giving as many people as possible an opportunity to become familiar with approved methods in these lines. One or more representatives of the Division of Highway Engineering will be present wherever these exhibits are shown, to explain the modes and to describe present practice in road construction and maintenance.

The fifth year work, leading to the degree of Civil Engineering (C. E.) offers opportunity for more advanced study in some of the branches of Civil Engineering than can be had within the limit of the four-year Course. Every student who can afford the time and money is urged to follow his four-year Course, when possible, with the more technical work of the fifth year.

COURSE IN ELECTRICAL ENGINEERING.

The Course in electrical engineering is designed to give the student a thorough training in the underlying principles of direct and alternating current phenomena and of electric measurements. It provides training in subjects fundamental to the general practice of the engineering profession, in the theory of electricity and in the application of the theory to practical problems in many branches of applied engineering.

The work of the first three years of the course is intended to cover most of the fundamental principles of engineering. This is followed in the Senior year by a more detailed study of the applications of these principles. The applied subjects are taught with two objects, the first and more important of which is to impress more firmly on the student's mind the principles already learned. The second object is to give the student some specific information about some branch of electrical engineering. To make this plan most effective, the student is expected to elect an applied subject in his Senior year.

The rapidly increasing number of electrical plants and circuits for power transmission, lighting, transportation, telephoning, and telegraphing demands men who are prepared to design, construct and operate them. The studies in the Course outlined have been carefully selected with this demand in view.

A branch of the American Institute of Electrical Engineering has been organized among the students and affords the means of keeping students in touch with the latest development in the electrical field.

COURSE IN GENERAL ENGINEERING.

The Course in General Engineering is designed for those who desire general training along engineering lines rather than special training in any one particular branch of engineering. This Course is commended to young men who contemplate going into business pursuits, especially those in which a general knowledge of engineering subjects is desirable. The work of the Freshman and Sophomore years is prescribed. That of the Junior and Senior years is largely elective; but a stated amount of work must be taken in the Departments of Civil, Electrical and Mechanical Engineering.

COURSE IN MECHANICAL ENGINEERING.

The Course in Mechanical Engineering is designed with a view of giving the student such training as will fit him to design, construct, and erect machinery, power and industrial plants, equipment, etc., and to manage or to operate the same with the greatest economy of labor and materials.

It is not possible to give the student that skill in the shops and that experience in the laboratories which come with long service in practical work, but the aim is to give him the power to understand and apply the underlying principles which are involved in all problems met with in practical engineering.

When it is remembered that there is a steam power plant or other mechanical equipment connected with practically every industrial enterprise it is apparent that the graduates from the Course in Mechanical Engineering should find a large field for their activities in the industrial development of the State. The training at College followed by a few years contact with the practical work should fit one to take charge of the operation or of the management of almost any industrial enterprise whether strictly mechanical engineering or involving other activities as well.

COURSE IN MILITARY ENGINEERING.

The Course in Military Engineering is designed to give the student a thorough education in general civil engineering, and also to prepare him for a commission in the Regular Army of the United States. A number of the graduates of this institution have entered the Army in the past, and this Course is particularly adapted to the needs of those who may hereafter wish to do so.

The first three years of this Course are practically indentical with the Civil Engineering Course, and it is in the Senior year that the military studies take a prominent place. A graduate of this Course will be well qualified for a commission as second lieutenant in the United States Army, and should have no trouble in passing the examinations prescribed by the War Department for all candidates from civil life.

COURSE IN TEXTILE ENGINEERING.

The object of this Course is to prepare young men for entering the field of textile manufacturing. The unprecedented development of the cotton milling industry in the South has brought about an era of prosperity and created a strong demand for educated young men in this industry. The State of Texas offers excellent advantages for the manufacture of cotton goods in its vast supply of raw material, intelligent labor, and excellent climatic conditions, and it is believed that cotton manufacturing will develop as rapidly as skilled and capable managers familiar with local conditions are to be had. The studies outlined have been selected with a view of giving theoretical and practical training in the manufacture of cotton goods as thorough as is possible with the time available.

SUBSTITUTION OF A MODERN LANGUAGE FOR ENGLISH.

1. In the Courses in Chemical Engineering, Civil Engineering, Electrical Engineering, Military Engineering, Textile Engineering, the student may, for satisfactory reasons approved by the Dean of the College, substitute a modern language, French, German or Spanish, for English 211, 212; in that case, he will be required to continue the same modern language in his Junior year, but will not be required to take English, 321, 322.

Application must be made by April 15 of the Freshman year.

2. In the Courses in Architecture, Architectural Engineering, General Engineering, Mechanical Engineering, the student may, for satisfactory reasons approved by the Dean of the College, substitute a modern language, French, German or Spanish, for English 311, 312; in that case he will be required to continue the same modern language in his Senior year.

Application must be made by April 15 of the Sophomore year.

TWO-YEAR COURSE IN ENGINEERING.

This Course is planned to meet the needs of young men who are not able to spend four years in college, and who desire to get elementary training in some of the phases of engineering. Upon completion of the first year's work in this Course, the student will be qualified to enter the Freshman class.

TWO-YEAR COURSE FOR ELECTRICIANS.

The Course for electricians is as complete in both theoretical and practical training as is possible in two years. It is intended to be a thoroughly practical Course, giving a familiarity with modern electric machines and their underlying principles.

The Course gives ample preparation for many positions in the electrical industry, and has for its object the training of young men for positions in power, lighting and railway plants and telephone service and in other industries using electricity and electrical machines.

The Course is designed particularly for young men who have had some practical experience in electrical work and who wish to add to their theoretical knowledge of electricity and allied subjects in order that they may prepare themselves for promotion to positions of greater responsibility.

TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

The Two-Year Course for Power Plant Operators is a short Course for those men who are unable to take a full four-year Course. Wherever it is possible for him to do so, the student is urged to take the regular four-year Course. The two-year Course is particularly intended for the man who has been at work in a powerhouse and who finds he is handicapped by a lack of theoretical preparation or education, and who finds himself thus prevented from making reasonable advancement. It is assumed that he will enter upon this Course with a very well defined idea of what he needs and with a determination to make the most of his opportunities. While the entrance requirements are made so low as to enable any deserving applicant to enter, any additional preparation or training he may possess will make it possible for him to better take advantage of the opportunities here given him.

The student completing this Course should find ready employment in subordinate positions at the numerous power plants of the State and should rapidly develop to the more responsible operating positions.

TWO-YEAR COURSE IN TELEPHONY.

This Course is intended for the young man who wishes to make a brief theoretical and practical study of the equipment used in the telephone industry. The Course begins with a study of the principles of electricity and magnetism, including such principles of alternating currents as are directly applicable to telephony. The various parts of the telephone are studied, as are distributing frames and switchboards.

A detailed study is made of the entire telephone plant, the principles of its design, and the methods of testing. The student is required to work numerous problems in plant design. Special emphasis is laid on methods of testing telephones and telephone circuits, and the student is given practice in making these tests under conditions as nearly as possible like those encountered in commercial work.

The course of instruction is augmented by occasional lectures from men in the commercial telephone field.

SUMMER SCHOOL OF COTTON CLASSING.

The eighth session of the Summer School of Cotton Classing will open June 19, 1916, and will continue six weeks.

The object of the course in Cotton Classing is to prepare young men for cotton buying and the running of cotton warehouses, and to offer to farmers the opportunity to increase their knowledge of the leading farm crop of Texas.

A study is made of the elements which determine the commercial grades of cotton, the influences which affect the price of cotton; the system of financing the crop from field to the factory, and the relation of exchanges to the business in general. New samples are put each day on the cotton tables for practice, and the work is patterned somewhat after that of a cotton office.

The first hour each morning will be spent in the study of Miller's "American Cotton System," the government's report on "Cotton Exchanges," and other literature on the subject, together with the handling of banking and shipping papers used in the business.

EXPENSES.

Registration fee	$ 7 50
Board at local hotel, per month	20 00
Room at local hotel, per month	8 00
Board at Mess Hall and room in Dormitory, per week	5 00

The registration fee is in no case refunded.

EQUIPMENT.

Students in the Summer School will have the use of the library and reading room, and of the shower baths. Those interested will have the opportunity to inspect the College farm, sheds, barns, silos, dairy, creamery and experimental plots.

Instruction in Cotton Classing is given in the Textile Building, and there the student can be shown the processes of manufacturing cotton and where the cotton goes.

The Government standards for classing cotton, which have been adopted by nearly all the leading exchanges with the exception of New York, will be used.

The State Experiment Station has in its cotton laboratory a fiber testing machine, showing the breaking strength of the individual fiber, and an instrument for measuring the length accurately. Demonstrations will be made showing the use and value of these machines.

WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY SURVEYORS.

The Department of Civil Engineering will, during the session of 1916-17, offer a short course for public road supervisors, road overseers, county surveyors, and others interested in such work. This Course will cover the most important features of country road construction and maintenance, and will consist of lectures, recitations, and field work. It will be open only to men over twenty-one years of age.

No entrance examinations will be required, and no college credit or certificate of proficiency will be given. Rooms will be charged for at the rate of $1.00 a week to cover cost of light, heat and janitor service. Meals will be furnished at the Mess Hall at 25 cents each, or $4.00 a week.

All students must register at the office of the Registrar.

Persons desiring to taks this Course should correspond in advance with the Professor of Highway Engineering.

READING COURSES IN HIGHWAY ENGINEERING.

It is believed that there are many engineers, and other men, interested in highway work who may not find it convenient to attend the regular courses in highway engineering, but who would like to take advantage of the College facilities to do studying along special lines adapted to their particular needs.

To such men the College offers the use of its libraries, files of technical magazines, bulletins, circulars, trade catalogues, road exhibits, laboratory, etc. The members of the Highway Engineering staff may be consulted at any time and will outline courses and put the student in touch with the best sources of information on any subject.

Persons over 21 years of age will be admitted to this Course at any time of the session and may remain as long as they desire. No entrance examinations are required and no college credit is given. There is no charge except for room and board. Rooms may be obtained in the dormitories for $1.00 a week, and meals will be served in the Mess Hall for 25 cents each, or $4.00 a week.

All students must register at the office of the Dean of the College.

Persons desiring to taks this Course should correspond in advance with the Professor of Highway Engineering.

IX.—COURSE IN ARCHITECTURE.

FRESHMAN YEAR.

First Term.	Hours per week. Rec.	Hours per week. Pr.	Second Term.	Hours per week. Rec.	Hours per week. Pr.
Architecture 101 Elements	0	9	Architecture 102 Elements	0	9
Chemistry 101 Inorganic	3	2	Architecture 106 Elements of Design	1	0
Drawing 101 Mechanical	0	3	Chemistry 102 Inorganic	3	2
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 109 Freehand	0	4	Drawing 110 Freehand	0	4
English 103 Rhetoric and Composition	3	0	Drawing 112 Shades, Shadows and Perspective	0	3
Mathematics 101 Algebra	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 102 Algebra	3	0
			Mathematics 104 Analytics	3	0
	14	18		14	18

SOPHOMORE YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Architecture 201 Design	0	12	Architecture 202 Design	0	12
Architecture 205 Carpentry	2	0	Architecture 206 Carpentry	3	0
Architecture 207 History of Architecture	2	0	Architecture 208 History of Architecture	2	0
Architecture 209 Theory of Design	1	0	Civil Engineering 204 Analytic Mechanics	3	0
Drawing 209 Freehand	0	4	Drawing 210 Freehand	0	4
English 203 Composition	1	0	English 204 Composition	1	0
Mathematics 205 Calculus	5	0	Military Science 202 Drill Regulations	1	0
Physics 203 General	3	2	Physics 204 General	3	4
	14	18		13	20

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Architecture 301 Design	0	15	Architecture 302 Design	0	15
Architecture 305 Masonry	3	0	Architecture 306 Steel Construction	2	0
Architecture 307 Plumbing	2	0	Architecture 308 Heating	2	0
Architecture 309 History of Architecture	2	0	Architecture 310 Historic Ornament	2	0
Civil Engineering 317 Strength of Materials	2	2	Civil Engineering 324 Stresses	2	2
Drawing 309 Freehand	0	4	Drawing 310 Freehand	0	4
English 301 Argumentation	1	0	English 302 Argumentation	1	0
English 311 Literature	3	0	English 312 Literature	3	0
			Military Science 302 Tactics	1	0
	13	21		13	21

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Architecture 401 Design	0	15	Architecture 402 Design	0	18
Architecture 405 History of Sculpture	1	0	Architecture 406 History of Painting	2	0
Civil Engineering 413 Reinforced Concrete	2	2	Architecture 408 Business Practice	2	0
Civil Engineering 431 Stresses	2	3	Drawing 410 Freehand	0	4
Drawing 409 Freehand	0	4	Economics 404 Business Organization	3	0
Economics 403 Fundamental Principles	3	0	Electrical Engineering 432 Electrical Lighting	2	2
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0			
	10	24		10	24

And one of the following:

English 421 Literature	2	0	English 422 Literature	2	0
History 403 Amer. History and Government	2	0	History 404 Amer. History and Government	2	0
Mod. Language 421, 423, 425 French, German or Spanish	2	0	Mod. Language 422, 424, 426 French, German or Spanish	2	0

VII.—COURSE IN ARCHITECTURAL ENGINEERING.

The Freshman and Sophomore years of the Course in Architectural Engineering are identical with those of the Course in Architecture, which see.

JUNIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Architecture 303 Structural Design	0	12	Architecture 304 Structural Design	0	12
Architecture 305 Masonry	3	0	Architecture 306 Steel Construction	2	0
Architecture 307 Plumbing	2	0	Architecture 308 Heating	2	0
Architecture 309 History of Architecture	2	0	Civil Engineering 324 Stresses	2	2
Civil Engineering 305 Mechanics of Materials	4	2	Drawing 310 Freehand	0	4
Drawing 309 Freehand	0	4	Electrical Engineering 310 Electric Lighting	2	2
English 301 Argumentation	1	0	English 302 Argumentation	1	0
English 311 Literature	2	0	English 312 Literature	2	0
			Military Science 302 Tactics	1	0
	14	18		12	20

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Architecture 403 Structural Design	0	15	Architecture 404 Structural Design	0	18
Civil Engineering 413 Reinforced Concrete	2	2	Architecture 408 Business Practice	2	0
Civil Engineering 431 Stresses	2	3	Civil Engineering 438 Higher Structures	2	3
Civil Engineering 433 Surveying	2	2	Chemistry 406 Geology	3	2
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0			
	11	22		11	23

And one of the following:

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Architecture 409 Fire Prevention Eng.	2	0	Architecture 410 Building Codes	2	0
English 421 Literature	2	0	English 422 Literature	2	0
History 403 Amer. History and Government	2	0	History 404 Amer. History and Government	2	0
Mod. Language 421, 423, 425 French, German or Spanish	2	0	Mod. Language 422, 424, 426 French, German or Spanish	2	0

VIII.—COURSE IN CHEMICAL ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

SOPHOMORE YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 205 Qualitative Analysis	2	8	Chemical Engineering 202 Quantitative Analysis	1	6
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
English 211 Literature	3	0	English 212 Literature	3	0
Mathematics 201 Analytics	1	0	Mathematics 204 Calculus	3	0
Mathematics 203 Calculus	4	0	Mechanical Engineering 206 Elementary Steam Eng.	3	0
Physics 203	3	2	Military Science 202 Drill Regulations	1	0
			Physics 204 General	3	4
	14	14		15	12

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemical Engineering 301 Adv. Quantitative Analysis	2	8	Chemical Engineering 302 Adv. Quantitative Analysis	1	3
Chemical Engineering 307 Industrial	3	0	Chemistry 302 Organic	3	4
Chemistry 301 Organic	2	4	Chemistry 306 Geology	3	2
Chemistry 305 History	1	0	Civil Engineering 314 Strength of Materials	2	2
Electrical Engineering 305 Electrical Machinery	2	0	Electrical Engineering 306 Electrical Machinery	2	3
English 301 Argumentation	1	0	English 302 Argumentation	1	0
English 321 Literature	2	0	English 322 Literature	2	0
Mechanical Engineering 315 Mechanical Laboratory	0	3	Military Science 302 Tactics	1	0
	13	15		15	14

SENIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemical Engineering 401 Physical Chemistry	3	4	Chemical Engineering 402 Physical Chemistry	3	4
Chemical Engineering 403 Technical Analysis	2	8	Chemical Engineering 404 Technical Analysis	2	6
Economics 403 Fundamental Principles	3	0	Chemical Engineering 406 Microchemical Methods	0	2
English 401 Public Speaking	1	0	Economics 404 Business Organization	3	0
Military Science 401 Tactics	1	0	English 402 Public Speaking	1	0
Elective	5	0	Elective	5	0
	15	12		14	12

Notes.—1. The electives selected by the student are subject to the approval of the head of the Chemical Engineering Department.

2. To those students desiring to do so, an opportunity will be given to specialize in the study of the cotton seed oil industry.

IV.—COURSE IN CIVIL ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

SOPHOMORE YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Civil Engineering 201 Plane Surveying	3	4	Civil Engineering 202 Railroad Engineering	2	4
Drawing 201 Mechanical	0	4	Civil Engineering 204 Analytic Mechanics	3	0
English 203 Composition	1	0	Drawing 202 Mechanical	0	2
English 211 Literature	3	0	English 204 Composition	1	0
Mathematics 201 Analytics	1	0	English 212 Literature	3	0
Mathematics 203 Calculus	4	0	Mathematics 204 Calculus	3	0
Physics 203 General	3	2	Military Science 202 Drill Regulations	1	0
			Physics 204 General	3	4
	15	10		15	10

GROUP A. GENERAL CIVIL ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 303 Railroad Construction	3	4	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 306 Roads and Pavements	3	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 308 Roofs and Bridges	3	0
Drawing 307 Topographic	0	2	Civil Engineering 310 Water Supply Engineering	2	0
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 312 Hydraulics	2	2
English 301 Argumentation	1	0	Electrical Engineering 306 Electrical Machinery	2	3
Mechanical Engineering 305 Elementary Steam Engineering	3	0	English 302 Argumentation	1	0
			Military Science 302 Tactics	1	0
	15	10		16	7

And one of the following:

English 321 Literature	2	0	English 322 Literature	2	0
History 303 Amer. History and Government	2	0	History 304 Amer. History and Government	2	0
Mod. Language 321, 323, 325 French, German or Spanish	2	0	Mod. Language 322, 324, 326 French, German or Spanish	2	0

SUMMER WORK.

Civil Engineering 400. Field practice, four weeks.

SENIOR YEAR.

Civil Engineering 401 Railroad Drafting	0	3	Chemistry 406 Geology	3	2
Civil Engineering 403 Roofs and Bridges	2	8	Civil Engineering 402 Sewerage	2	0
Civil Engineering 405 General	0	3	Civil Engineering 404 Bridge Design	0	4
Civil Engineering 407 Masonry	3	0	Civil Engineering 406 General	0	3
Civil Engineering 409 Irrigation and Drainage	2	0	Civil Engineering 408 Higher Structures	3	4
Civil Engineering 413 Reinforced Concrete	2	0	Civil Engineering 410 Contracts and Specifications	2	0
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0			
	14	14		14	13

GROUP B. HIGHWAY ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Hours per week. Pr.	Second Term.	Hours per week. Rec.	Hours per week. Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 303 Railroad Construction	3	4	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 305 Mechanics and Materials	4	2	Civil Engineering 308 Roofs and Bridges	2	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 310 Water Supply Engineering	2	0
Drawing 307 Topographic	0	2	Civil Engineering 312 Hydraulics	2	2
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 322 Rural Highways	3	0
English 301 Argumentation	1	0	Electrical Engineering 306 Electrical Machinery	2	3
			English 302 Argumentation	1	0
			Military Science 302 Tactics	1	0
	12	10		16	7

And one of the following:

English 321 Literature	2	0	English 322 Literature	2	0
History 303 American History and Gov.	2	0	History 304 American History and Gov.	2	0
Mod. Language 321, 323, 325 French, German or Spanish	2	0	Mod. Language 322, 324, 326 French, German or Spanish	2	0

SUMMER WORK.

Civil Engineering 400. Field practice, four weeks.

SENIOR YEAR.

Civil Engineering 407 Masonry	3	0	Chemistry 406 Geology	3	2
Civil Engineering 413 Reinforced Concrete	2	0	Civil Engineering 410 Contracts and Specifications	2	0
Civil Engineering 421 Bituminous Materials	4	2	Civil Engineering 422 Non-Bituminous Pavements	4	0
Civil Engineering 423 Bridge Design	0	6	Civil Engineering 424 Road and Street Systems	2	4
Civil Engineering 425 Road Laboratory	0	2	Civil Engineering 426 Highway Bridges and Culverts	1	4
Civil Engineering 429 Highway Laws, Economics, Organization	2	0	Economics 404 Business Organization	3	0
Economics 403 Fundamental Principles	3	0	English 402 Public Speaking	1	0
English 401 Public Speaking	1	0			
Military Science 401 Tactics	1	0			
	16	10		16	10

GROUP C. MUNICIPAL AND SANITARY ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 303 Railroad Construction	3	4	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 306 Roads and Pavements	3	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 308 Roofs and Bridges	3	0
Chemistry 307 Quantitative Analysis	1	4	Civil Engineering 310 Water Supply Engineering	2	0
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 312 Hydraulics	2	2
English 301 Argumentation	1	0	Chemistry 310 Water Analysis	1	3
Mechanical Engineering 305 Elem. Steam Engineering	3	0	Electrical Engineering 306 Electrical Machinery	2	3
			English 302 Argumentation	1	0
			Military Science 302 Tactics	1	0
	16	12		17	10

And one of the following:

English 321 Literature	2	0	English 322 Literature	2	0
History 303 American History and Gov.	2	0	History 304 American History and Gov.	2	0
Mod. Language 321, 323, 325 French, German or Spanish	2	0	Mod. Language 322, 324, 326 French, German or Spanish	2	0

SUMMER WORK.

Civil Engineering 400. Field practice, four weeks.

SENIOR YEAR.

Biology 421 Bacteriology	2	4	Chemistry 406 Geology	3	2
Civil Engineering 407 Masonry	3	0	Civil Engineering 410 Contracts and Specifications	2	0
Civil Engineering 413 Reinforced Concrete	2	2	Civil Engineering 422 Non-Bituminous Materials	4	0
Civil Engineering 421 Bituminous Materials	4	2	Civil Engineering 424 Road and Street Systems	2	4
Civil Engineering 423 Bridge Design	0	4	Civil Engineering 428 Sewerage and Filtration	3	4
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0			
	16	12		18	10

V.—COURSE IN ELECTRICAL ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

SOPHOMORE YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
Electrical Engineering 201 Electricity and Magnetism	4	4	Electrical Engineering 202 Electrical Measurements	4	4
English 203 Composition	1	0	English 204 Composition	1	0
English 211 Literature	3	0	English 212 Literature	3	0
Mathematics 201 Analytics	1	0	Mathematics 204 Calculus	3	0
Mathematics 203 Calculus	4	0	Military Science 202 Drill Regulations	1	0
Mechanical Engineering 201 Pattern Making and Foundry	0	4	Physics 208 General	2	2
Physics 207 General	2	2	Civil Engineering 206 Surveying and Leveling	2	3
	15	14		16	11

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Electrical Engineering 301 Direct Currents	4	6	Civil Engineering 316 Mechanics of Materials	4	2
English 301 Argumentation	1	0	Electrical Engineering 304 Problems	0	2
English 321 Literature	2	0	English 302 Argumentation	1	0
Mechanical Engineering 305 Elementary Steam Engines	3	0	English 322 Literature	2	0
Mechanical Engineering 317 Engineering Mechanics	4	0	Mechanical Engineering 308 Kinematics	3	0
Mechanical Engineering 335 Machine Shop Practice	0	4	Military Science 302 Tactics	1	0
Economics 305 Business Law	2	0	Electrical Engineering 302 Alternating Currents	5	4
			Mechanical Engineering 336 Machine Shop	0	2
	16	10		16	10

SENIOR YEAR.

First Term.	Hours per week.	
	Rec.	Pr.
Economics 403 Fundamental Principles	3	0
Electrical Engineering 401 Alternating Current Machinery	3	4
Electrical Engineering 403 Electrical Machine Design	3	4
English 401 Public Speaking	1	0
Mechanical Engineering 411 Steam Engines and Boilers	2	0
Mechanical Engineering 415 Engineering Laboratory	0	3
Military Science 401 Tactics	1	0
Electrical Engineering 429 Applications	2	0
	15	11

Second Term.	Hours per week.	
	Rec.	Pr.
Economics 404 Business Organization	3	0
Electrical Engineering 402 Alternating Current Machinery	3	4
Electrical Engineering 404 Power Plant Design	1	2
Electrical Engineering 406 Power Transmission	2	0
Electrical Engineering 408 General Problems	0	2
English 402 Public Speaking	1	0
Mechanical Engineering 412 Steam Engines and Boilers	3	0
Mechanical Engineering 416 Engineering Laboratory	0	3
*Elective	2	2
	15	13

*The elective is to be selected from the following:

Electrical Engineering 424 Electrical Railways	2	2	Electrical Engineering 428 Telephony	2	2
Electrical Engineering 426 Illumination	2	2	Electrical Engineering 430 Plant Management and Technical Writing	2	2

XI.—COURSE IN GENERAL ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

SOPHOMORE YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 207 Quantitative Analysis	1	4	Civil Engineering 202 Railroad Engineering	2	4
Civil Engineering 201 Plane Surveying	3	4	Civil Engineering 204 Analytic Mechanics	3	0
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
Mathematics 201 Analytics	1	0	Mathematics 204 Calculus	3	0
Mathematics 203 Calculus	4	0	Mechanical Engineering 206 Elem. Steam Engineering	3	0
Physics 203 General	3	2	Military Science 202 Drill Regulations	1	0
Engineering Assembly	1	0	Physics 204 General	3	4
			Engineering Assembly	1	0
	13	14		16	10

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 305 Mechanics of Materials	4	2	English 302 Argumentation	1	0
English 301 Argumentation	1	0	English 312 Literature	3	0
English 311 Literature	3	0	Military Science 302 Tactics	1	0
Elective	11	0	Elective	15	0
	19	4		20	2

SENIOR YEAR.

First Term.	Hours per week. Rec.	Pr.
Economics 403 Fundamental Principles	3	0
English 401 Public Speaking	1	0
*English 421 Literature	2	0
Military Science 401 Tactics	1	0
Elective	14	0
	21	0
*Or Mod. Lan. 421, 423, or 425 French, German or Spanish	2	0
Or History 303 American History and Gov.	2	0

Second Term.	Hours per week. Rec.	Pr.
Economics 404 Business Organization	3	0
English 402 Public Speaking	1	0
*English 422 Literature	2	0
Elective	15	0
	21	0
*Or Mod. Lan. 422, 424, or 426 French, German or Spanish	2	0
Or History 304 American History and Gov.	2	0

ELECTIVES.

Of the electives, not less than seven term-hours must be in each of the departments of Civil, Electrical and Mechanical Engineering. The electives must be chosen under the advice and direction of the Dean of Engineering.

First Term.	Hours per week. Rec.	Pr.
Chemical Engineering 407 Industrial	3	0
Civil Engineering 303 Railroad Construction	3	4
Civil Engineering 311 Hydraulics	2	0
Civil Engineering 401 Railroad Drafting	0	3
Civil Engineering 403 Roofs and Bridges	2	8
Civil Engineering 405 General	0	3
Civil Engineering 407 Masonry	3	0
Civil Engineering 409 Irrigation and Drainage	2	0
Civil Engineering 413 Reinforced Concrete	2	2
Electrical Engineering 301 Direct Currents	5	6
Electrical Engineering 307 Electrical Machinery	3	0
Electrical Engineering 401 Alternating Current Machinery	3	6
Electrical Engineering 403 Electrical Machine Design	3	4
Electrical Engineering 421 General	2	0
Electrical Engineering 423 Electrical Railways	2	0
Electrical Engineering 425 Illumination	2	0
Electrical Engineering 427 Telephony	2	0
Electrical Engineering 429 Industrial Applications	2	0

Second Term.	Hours per week. Rec.	Pr.
Chemical Engineering 408 Metallurgy	2	0
Chemistry 406 Geology	3	2
Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 306 Roads and Pavements	3	0
Civil Engineering 310 Water Supply Engineering	2	0
Civil Engineering 312 Hydraulics	2	2
Civil Engineering 322 Rural Highways	3	0
Civil Engineering 402 Sewerage	2	0
Civil Engineering 404 Bridge Design	0	4
Civil Engineering 406 General	0	3
Civil Engineering 408 Higher Structures	3	4
Civil Engineering 410 Contracts and Specifications	2	0
Electrical Engineering 302 Alternating Currents	5	6
Electrical Engineering 304 Problems	0	2
Electrical Engineering 308 Electrical Machinery	3	3
Electrical Engineering 402 Alternating Current Machinery	3	4
Electrical Engineering 404 Power Plant Design	1	3
Electrical Engineering 422 General	2	0
Electrical Engineering 424 Electrical Railways	2	0
Electrical Engineering 426 Illumination	2	0
Electrical Engineering 428 Telephony	2	0
Electrical Engineering 430 Plant Management and Technical Writing	2	0

First Term.	Hours per week. Rec.	Pr.
Mechanical Engineering 301... Engines and Boilers	2	0
Mechanical Engineering 303... Machine Design	0	5
Mechanical Engineering 309... Machine Shop Practice	0	6
Mechanical Engineering 401... Engineering Design	0	4
Mechanical Engineering 403... Engineering Laboratory	0	6
Mechanical Engineering 405... Engineering Design	3	0
Mechanical Engineering 407... Thermodynamics	4	0
Mod. Lan. 211, 213, or 215... French, German or Spanish	3	0
History 303 .... American History and Gov.	2	0
or Mod. Lan. 321, 323, or 325 French, German or Spanish	2	0

Second Term.	Hours per week. Rec.	Pr.
Mechanical Engineering 302... Engines and Boilers	3	0
Mechanical Engineering 304... Machine Design	0	5
Mechanical Engineering 310... Machine Shop Practice	0	5
Mechanical Engineering 402... Engineering Design	0	4
Mechanical Engineering 404... Engineering Laboratory	0	4
Mechanical Engineering 406... Engineering Design	3	0
Mechanical Engineering 408... Thermodynamics	2	0
Mechanical Engineering 410... Gas Engines	2	0
Mod. Lan. 212, 214, or 216. French, German or Spanish	3	0
or Economics 306.......... Business Law	2	0
History 304 .... American History and Gov.	2	0
or Mod. Lan. 322, 324, or 326 French, German or Spanish	2	0

III.—COURSE IN MECHANICAL ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

SOPHOMORE YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 207 Quantitative Analysis	1	4	Chemistry 208 Technical Analysis	1	3
Drawing 201 Mechanical	0	4	English 204 Composition	1	0
English 203 Composition	1	0	Mathematics 204 Calculus	3	0
Mathematics 201 Analytics	1	0	Mechanical Engineering 202 Pattern Making and Foundry	0	4
Mathematics 203 Calculus	4	0	Mechanical Engineering 208 Kinematics	3	0
Mechanical Engineering 201 Pattern Making and Foundry	0	4	Mechanical Engineering 210 Kinematic Drawing	0	3
Mechanical Engineering 203 Principles of Manufacture	1	0	Mechanical Engineering 216 Engineering Mechanics	2	0
Mechanical Engineering 205 Elem. Steam Engineering	3	0	Military Science 202 Drill Regulations	1	0
Physics 203 General	3	2	Physics 204 General	3	4
	14	14		14	14

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 318 Surveying and Stresses	3	3
Electrical Engineering 307 Electrical Machinery	3	0	Electrical Engineering 308 Electrical Machinery	3	3
English 301 Argumentation	1	0	English 302 Argumentation	1	0
English 311 Literature	3	0	English 312 Literature	3	0
Mechanical Engineering 301 Engines and Boilers	2	0	Mechanical Engineering 302 Engines and Boilers	3	0
Mechanical Engineering 303 Machine Design	0	5	Mechanical Engineering 304 Machine Design	0	5
Mechanical Engineering 309 Machine Shop Practice	0	6	Mechanical Engineering 310 Machine Shop Practice	0	5
Mechanical Engineering 313 Engineering Mechanics	3	0	Military Science 302 Tactics	1	0
	12	13		10	16

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemical Engineering 407 Industrial	3	0	Chemical Engineering 408 Metallurgy	2	0
Civil Engineering 411 Hydraulics	2	0	Civil Engineering 412 Hydraulics	2	2
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Mechanical Engineering 401 Engineering Design	0	4	Mechanical Engineering 402 Engineering Design	0	4
Mechanical Engineering 403 Engineering Laboratory	0	6	Mechanical Engineering 404 Engineering Laboratory	0	4
Mechanical Engineering 405 Engineering Design	3	0	Mechanical Engineering 406 Engineering Design	3	0
Mechanical Engineering 407 Thermodynamics	4	0	Mechanical Engineering 408 Thermodynamics	2	0
Military Science 401 Tactics	1	0	Mechanical Engineering 410 Gas Engines	2	0
	14	10		12	10

And one of the following:

Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 421 Literature	2	0	English 422 Literature	2	0
History 403 American History and Gov.	2	0	History 404 American History and Gov.	2	0
Mod. Lan. 421, 423, or 425 French, German or Spanish	2	0	Mod. Lan. 422, 424, or 426 French, German or Spanish	2	0

Note—To those students desiring to do so, an opportunity will be given to specialize in the study of the cotton seed oil industry.

XII.—COURSE IN MILITARY ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

SOPHOMORE YEAR.

Civil Engineering 201 Plane Surveying	3	4	Civil Engineering 202 Railroad Engineering	2	4
Drawing 201 Mechanical	0	4	Civil Engineering 204 Analytic Mechanics	3	0
English 203 Composition	1	0	Drawing 202 Mechanical	0	2
English 211 Literature	3	0	English 204 Composition	1	0
Mathematics 201 Analytics	1	0	English 212 Literature	3	0
Mathematics 203 Calculus	4	0	Mathematics 204 Calculus	3	0
Military Science 201 Military Hygiene	1	0	Military Science 202 Drill Regulations	1	0
Physics 203 General	3	2	Physics 204 General	3	4
	16	10		16	10

SUMMER WORK.

Six weeks' course in United States Army Students' Military Instruction Camp.

JUNIOR YEAR.

First Term.	Hours per week.	
	Rec.	Pr.
Civil Engineering 301 Graphics	0	2
Civil Engineering 303a Railroad Construction	3	2
Civil Engineering 305 Mechanics of Materials	4	2
Civil Engineering 311 Hydraulics	2	0
Drawing 307 Topographic	0	2
Electrical Engineering 305 Electrical Machinery	2	0
English 301 Argumentation	1	0
English 321 Literature	2	0
Mechanical Engineering 305 Elem. Steam Engineering	3	0
	17	8

Second Term.	Hours per week.	
	Rec.	Pr.
Civil Engineering 302 Graphics	0	2
Civil Engineering 304 Railroad Construction	2	0
Civil Engineereing 306 Roads and Pavements	3	0
Civil Engineering 308 Roofs and Bridges	3	0
Civil Engineering 320 Contracts and Specifications	2	0
Civil Engineering 312 Hydraulics	2	2
Electrical Engineering 306 Electrical Machinery	2	3
English 302 Argumentation	1	0
English 322 Literature	2	0
Military Science 302 Tactics	1	0
	18	7

SUMMER WORK.

Civil Engineering 400. Field practice, four weeks.

*Six weeks' course in United States Army Students' Military Instruction Camp.

SENIOR YEAR.

First Term.	Hours per week.	
	Rec.	Pr.
Civil Engineering 403a Roofs and Bridges	2	2
Civil Engineering 413 Reinforced Concrete	2	2
Economics 403 Fundamental Principles	3	0
Economics 407 Elem. and Constitutional Law	4	0
English 401 Public Speaking	1	0
Military Science 401 Tactics	1	0
Military Science 403 Military History of U. S.	3	0
Military Science 405 Fortifications and Entrenchments	2	0
Military Science 407 Ordnance and Gunnery	3	0
	21	4

Second Term.	Hours per week.	
	Rec.	Pr.
Civil Engineering 402 Sewerage	2	0
Chemistry 406 Geology	3	2
English 402 Public Speaking	1	0
Economics 404 Business Organization	3	0
Military Science 402 International and Military Law	4	0
Military Science 404 Military Field Engineering	4	0
Military Science 408 Ordnance and Gunnery	3	0
	20	2

*Not required of those who took the corresponding work in the summer following their sophomore year.

VI.—COURSE IN TEXTILE ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 108 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	2	0	Mechanical Engineering 102 Elementary Mechanics	2	0
Mechanical Engineering 103 Carpentry	0	4	Mechanical Engineering 104 Forging	0	4
	16	10		16	10

SOPHOMORE YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 201 Organic	2	4	Chemistry 202 Organic	3	4
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
English 211 Literature	3	0	English 212 Literature	3	0
Mechanical Engineering 205 Elem. Steam Engineering	3	0	Mechanical Engineering 208 Kinematics	3	0
Physics 203 General	3	2	Military Science 202 Drill Regulations	1	0
Textile Engineering 201 Designing	3	2	Physics 204 General	3	4
			Textile Engineering 202 Designing	3	0
	15	12		17	10

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Electrical Engineering 305 Electrical Machinery	2	0	Chemistry 308 Dyeing	2	2
English 301 Argumentation	1	0	Electrical Engineering 306 Electrical Machinery	2	3
Mechanical Engineering 321 Machine Shop Practice	0	6	English 302 Argumentation	1	0
Textile Engineering 301 Yarn Manufacture	4	2	Military Science 302 Tactics	1	0
Textile Engineering 303 Designing	3	0	Textile Engineering 302 Yarn Manufacture	2	2
Textile Engineering 305 Weaving	3	2	Textile Engineering 304 Designing	3	0
Textile Engineering 307 Fabric Analysis	1	0	Textile Engineering 306 Weaving	3	3
	14	10		14	10

And one of the following:

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
English 321 Literature	2	0	English 322 Literature	2	0
History 303 American History and Gov.	2	0	History 304 American History and Gov.	2	0
Mod. Lang. 321, 323 or 325 French, German or Spanish	2	0	Mod. Lang. 322, 324 or 326 French, German or Spanish	2	0

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemistry 407 Quantitative Analysis	1	4	Chemistry 408 Quantitative Analysis	1	3
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401 Tactics	1	0	Textile Engineering 402 Yarn Manufacture	3	4
Textile Engineering 401 Yarn Manufacture	3	4	Textile Engineering 404 Fabric Analysis	1	0
Textile Engineering 405 Sizing	3	0	Textile Engineering 406 Sizing	3	0
Textile Engineering 407 Weaving	3	4	Textile Engineering 408 Weaving	0	4
			Textile Engineering 410 Mill Management	3	0
			Textile Engineering 412 Magazine Review	1	0
	15	12		16	11

E.—TWO-YEAR COURSE IN ENGINEERING.

FIRST YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Drawing 19 Mechanical	0	4	Drawing 20 Mechanical	0	4
English 21 Practical Composition	3	0	English 22 Practical Composition	3	0
Mathematics 15 Plane Geometry	6	0	Mathematics 16 Algebra	3	0
Mechanical Engineering 35 Elementary	2	2	Mathematics 18 Solid Geometry	3	0
Mechanical Engineering 39 Woodwork	0	4	Mechanical Engineering 36 Elementary	2	2
Physics 11 Elementary	3	2	Mechanical Engineering 40 Ironwork	0	4
			Physics 12 Elementary	3	2
	14	12		14	12

SECOND YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Civil Engineering 51 Graphics	1	3	Civil Engineering 52 Surveying	3	4
Electrical Engineering 51 Applied Electricity	4	4	Electrical Engineering 52 Applied Electricity	4	4
English 53 Rhetoric and Composition	3	0	English 54 Rhetoric and Composition	3	0
Mathematics 53 Trigonometry	3	0	Mechanical Engineering 52 Elementary Mechanics	2	0
Mechanical Engineering 51 Elementary Mechanics	2	0	Mechanical Engineering 76 Power Transmission	3	0
Mechanical Engineering 75 Elementary Steam Engineering	3	0	Mechanical Engineering 78 Machine Shop	0	4
Mechanical Engineering 77 Pattern Making and Foundry	0	4			
	16	11		15	12

F.—TWO-YEAR COURSE FOR ELECTRICIANS.

FIRST YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Drawing 11 Mechanical	0	3	Drawing 12 Mechanical	0	3
Drawing 13 Freehand	0	1	Drawing 14 Freehand	0	1
English 11 Grammar, Composition	3	0	English 12 Grammar, Composition	3	0
Electrical Engineering 21 Electricity and Magnetism	3	4	Electrical Engineering 22 Direct Currents	3	4
Mathematics 13 Shop Mathematics	4	0	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 23 Carpentry	0	4	Mechanical Engineering 32 Elementary Mechanics	2	0
Mechanical Engineering 31 Elementary Mechanics	2	0	Mechanical Engineering 42 Machine Shop Practice	0	6
Physics 11 Elementary	3	2	Physics 12 Elementary	3	2
	15	14		14	16

SECOND YEAR.

Drawing 53 Mechanical	0	2	Drawing 52 Mechanical	0	4
English 51 Practical Composition	3	0	Electrical Engineering 56 Meters	2	0
Electrical Engineering 55 Alternating Currents	3	0	Electrical Engineering 58 Electrical Machinery	6	0
Electrical Engineering 57 Wiring and Illumination	3	0	Electrical Engineering 62 Electrical Laboratory	0	8
Electrical Engineering 61 Electrical Laboratory	0	8	Electrical Engineering 64 Business Forms	1	0
Mechanical Engineering 63 Engineering Laboratory	0	3	Mechanical Engineering 64 Engineering Laboratory	0	3
Mechanical Engineering 25 Forging	0	4	Mechanical Engineering 70 Power Plant Practice	0	2
Mechanical Engineering 75 Engines, Valves, Indicators	4	0	Mechanical Engineering 75 Engines, Valves, Indicators	4	0
	13	17		13	17

G.—TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

FIRST YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Drawing 11 Mechanical	0	3	Chemistry 22 Practical	2	4
Drawing 13 Freehand	0	1	Drawing 12 Mechanical	0	3
English 11 Grammar, Composition	3	0	Drawing 14 Freehand	0	1
Mathematics 13 Shop Mathematics	4	0	English 12 Grammar, Composition	3	0
Mechanical Engineering 23 Carpentry	0	4	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 25 Forging	0	4	Mechanical Engineering 32 Elementary Mechanics	2	0
Mechanical Engineering 31 Elementary Mechanics	2	0	Mechanical Engineering 42 Machine Shop Practice	0	6
Mechanical Engineering 47 Pat. Mkg. and Fdy.	0	4	Mechanical Engineering 46 Boilers and Power Plants	4	0
Mechanical Engineering 45 Engines, Valves, Indicators	4	0			
	13	16		14	14

SECOND YEAR.

Electrical Engineering 51 Applied Electricity	4	4	Electrical Engineering 52 Applied Electricity	4	4
Mechanical Engineering 53 Technical Literature	2	0	Mechanical Engineering 54 Technical Literature	2	0
Mechanical Engineering 55 General Mech. Engineering	3	0	Mechanical Engineering 56 Pumping Machinery	3	0
Mechanical Engineering 57 Internal Combustion Engines	3	0	Mechanical Engineering 58 Refrigeration	2	0
Mechanical Engineering 59 Machine Design	3	3	Mechanical Engineering 60 Machine Design	3	3
Mechanical Engineering 61 Machine Shop Practice	0	4	Mechanical Engineering 62 Machine Shop Practice	0	3
Mechanical Engineering 63 Eng. Lab. Practice	0	3	Mechanical Engineering 64 Eng. Lab. Practice	0	3
			Mechanical Engineering 68 Power Plant Practice	0	4
	15	14		14	17

H.—TWO-YEAR COURSE IN TEXTILE ENGINEERING.

FIRST YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Drawing 11 Mechanical	0	3	Drawing 12 Mechanical	0	3
Drawing 13 Freehand	0	1	Drawing 14 Freehand	0	1
English 11 Grammar, Composition	3	0	English 12 Grammar, Composition	3	0
Mechanical Engineering 23 Carpentry	0	4	Mechanical Engineering 24 Forging	0	4
Textile Engineering 11 Designing	3	0	Textile Engineering 12 Designing	3	0
Textile Engineering 13 Yarn Manufacture	3	2	Textile Engineering 14 Yarn Manufacture	3	4
Textile Engineering 15 Weaving	3	4	Textile Engineering 16 Weaving	3	2
	12	14		12	14

SECOND YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Drawing 51 Mechanical	0	4	Drawing 52 Mechanical	0	4
English 51 Practical Composition	3	0	English 52 Practical Composition	3	0
Mechanical Engineering 77 Wood Turning	0	4	Mechanical Engineering 78 Machine Shop Practice	0	4
Textile Engineering 51 Yarn Manufacture	3	4	Textile Engineering 52 Yarn Manufacture	3	4
Textile Engineering 53 Designing	3	0	Textile Engineering 54 Designing	3	0
Textile Engineering 55 Weaving	3	4	Textile Engineering 56 Weaving	0	4
Textile Engineering 57 Designing	1	0	Textile Engineering 58 Designing	1	0
			Textile Engineering 60 Mill Management	2	0
	13	16		12	16

L.—TWO-YEAR COURSE IN TELEPHONY.

FIRST YEAR.

First Term.	Hours per week. Rec.	Hours per week. Pr.	Second Term.	Hours per week. Rec.	Hours per week. Pr.
Drawing 11 Mechanical	0	3	Drawing 12 Mechanical	0	3
Drawing 13 Freehand	0	1	Drawing 14 Freehand	0	1
English 11 Grammar, Composition	3	0	English 12 Grammar, Composition	3	0
Electrical Engineering 21 Electricity and Magnetism	3	4	Electrical Engineering 22 Direct Currents	3	4
Mathematics 13 Shop Mathematics	4	0	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 23 Carpentry	0	4	Mechanical Engineering 32 Elementary Mechanics	2	0
Mechanical Engineering 31 Elementary Mechanics	2	0	Electrical Engineering 26 Telephone Plants	2	0
Physics 11 Elementary	3	2	Physics 12 Elementary	3	2
	15	14		16	10

SECOND YEAR.

First Term.	Hours per week. Rec.	Hours per week. Pr.	Second Term.	Hours per week. Rec.	Hours per week. Pr.
English 51 Practical Composition	3	0	English 52 Practical Composition	3	0
Electrical Engineering 55 Alternating Currents	3	0	Electrical Engineering 58 Electrical Machinery	6	0
Electrical Engineering 57 Wiring and Illumination	3	0	Electrical Engineering 62 Electrical Laboratory	0	8
Electrical Engineering 61 Electrical Laboratory	0	8	Electrical Engineering 64 Business Forms	1	0
Electrical Engineering 59 Telephony	4	0	Electrical Engineering 68 Telephone Plant Design	0	4
Electrical Engineering 63 Telephone Testing	0	6	Electrical Engineering 60 Telephony	4	2
	13	14		14	14

THE SCHOOL OF VETERINARY MEDICINE.

(Organization 1916-17)

FACULTY.

WILLIAM BENNETT BIZZELL, M. A., D. C. L.,
President.

M. FRANCIS, D. V. M.,
Dean.

CHARLES PURYEAR, M. A., C. E., LL. D.,
Dean of the College.

M, FRANCIS, D. V. M.,
Professor of Veterinary Anatomy.

C. P. FOUNTAIN, A. M.,
Professor of English.

O. M. BALL, M. A., Ph. D.,
Professor of Biology.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

C. B. CAMPBELL, Ph. D.,
Professor of Modern Languages.

J. W. RIDGWAY, M. S.,
Professor of Dairy Husbandry.

W. T. WRIGHT, B. S., A. B.,
Professor of Physics.

JAMES R. HILL, Second Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics,
Commandant of Cadets.

R. P. MARSTELLER, D. V. M.,
Professor of Veterinary Medicine and Surgery.

. . . .,
Professor of Physiology and Pharmacology.

. . . .,
Professor of Pathology.

W. H. THOMAS, B. Lit.,
Associate Professor of English.

F. W. BELL, B. S. A.,
Associate Professor of Animal Husbandry.

L. B. BURK, B. S. A.,
Associate Professor of Animal Husbandry.

S. W. BILSING, B. S., M. A.,
Associate Professor of Entomology.

COURSE IN VETERINARY MEDICINE.

This course has for its object the systematic training of young men in all matters pertaining to diseases of domestic animals.

The Freshman and Sophomore years are, in large measure, devoted to those physical and biological studies that contribute so much to an understanding of the problems of health and disease. The Junior and Senior years are almost entirely devoted to studies of a technical nature.

Those who expect to engage in ranching, dairying or some other branch of animal industry, will find the course of great value to them in preventing serious losses from disease or mismanagement of their animals. Those who possess a biological mind will find it an interesting life study, and such men are in great demand in matters of public health or as investigators in our Experiment Stations. Those who pursue the course from commercial motives will find its rewards are similar to those of any other form of human endeavor, in that these will always be in proportion to the intelligence and energy displayed by the individual.

When we recall that the value of domestic animals in Texas is about five hundred million dollars, it becomes apparent that men informed on such matters will be of great value to the State.

XIII.—COURSE IN VETERINARY MEDICINE.

For the session 1916-17, only the Freshman year of this Course will be taught. The announcement of the subjects for the Sophomore, Junior and Senior years is tentative only. A more detailed announcement will be published in the next catalogue.

FRESHMAN YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Anatomy 111	3	6	Anatomy 112	3	4
Biology 101 Botany	3	2	Biology 102 Botany	3	2
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Physics 101 Principles of Physics	2	2	Physics 102 Principles of Physics	2	2
Physiology 121	3	2	Physiology 122	3	2
	17	14		17	12

SOPHOMORE YEAR.

Anatomy
Bacteriology
Chemistry
English or German
Entomology
Zoology

Anatomy
Animal Husbandry
English or German
Military Science
Pharmacology
Surgery
Zoology

JUNIOR YEAR.

Bacteriology
Clinic
Dairy Husbandry
Pathology
Pharmacology
Surgery
Veterinary Medicine

Animal Husbandry
Bacteriology
Clinic
Military Science
Pathology
Surgery
Veterinary Medicine

SENIOR YEAR.

Animal Nutrition
Clinic
Diseases of Small Animals
Infectious Diseases
Military Science
Serum Therapy
Toxicology

Clinic
Jurisprudence
Meat Inspection
Operative Surgery
Sanitary Science
Elective

COURSES OF INSTRUCTION.

The courses of instruction are described on the following pages under the departments in which they are offered. Courses from 101 to 199 are for Freshmen, 201 to 299 for Sophomores, 301 to 399 for Juniors, 401 to 499 for Seniors; 1 to 49 for first-year students in short Courses; 51 to 99 for second-year students in short Courses. First-term courses are given odd numbers, second-term courses, even numbers.

The figures in parenthesis following the name of a course indicate the number of hours per week, theory and practice, respectively, devoted to the course.

For convenience of reference, the departments are listed here in alphabetical order:

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Dairy Husbandry 139
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Economics 146
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Horticulture 168
Mathematics 173
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Military Science 184
Modern Languages 187
Physics 189
Textile Engineering 192
Veterinary Medicine 197

DEPARTMENT OF AGRICULTURAL EDUCATION.

PROFESSOR HAYES, ASSOCIATE PROFESSOR BLACKWELL, ASSISTANT PROFESSOR RUBINOW.

The demand for skilled teachers of agriculture in high schools, normal schools and colleges makes the work of this department highly interesting to those students who desire to teach. It is universally conceded that knowledge of subject-matter alone is insufficient to insure success in the teaching profession. Opportunity is given the student to anticipate and solve some of the problems of teaching before accepting a position.

Under the laws of Texas, graduates of this College who have completed four "full courses" (equivalent to twenty-four term hours) in education will be granted a permanent State certificate. Those who have completed one "full course" (equivalent to six term hours) in education will be given a first grade State certificate, which is good for four years. Sufficient work is offered in this department to enable a student to secure a permanent State certificate upon graduation.

The graduates of agricultural colleges should be leaders in rural betterment. The work of this department will enable the student to appreciate the conditions of rural life and to find means for improvement of those conditions.

Agricultural extension work has had a phenomenal growth in recent years. Not only have universities, colleges, experiment stations and various Federal, State and county institutions engaged in the work of disseminating agricultural information, but railroads and commercial organizations of various kinds are employing experts for extension and demonstration work. The already great demand for capable extension and demonstration workers will increase greatly under the provisions of the Smith-Lever Act. Work is offered in this department that will aid students in the preparation for such positions.

This department is cooperating with numerous high schools, county superintendents, and teachers of agriculture throughout the State, assisting them in the organization of courses of study, the planning of laboratory and field work, and the undertaking of extension work in the community. An effort will be made to visit at least once during the year each high in the State teaching agriculture. The services of the department are offered to the superintendents, teachers and schools of the State, and school officers are invited to confer with the department in securing teachers of agriculture for high schools.

The courses are as follows:

301. Educational Psychology. (3-0).

This is a beginning course in psychology with special emphasis on its application to the problems of teaching. Stress will be placed upon instincts, habit formation, memory, attention, and the psychological principles of industrial subjects in the curriculum. The course is strongly advised as a beginning in the study of education.

Text: To be assigned.

302. Methods. (3-0).

The fundamental principles of the aims and methods of the recitation are considered with their application to the conditions of the high school. Lesson plans and practice teaching in agriculture and other kindred subjects form an interesting and important part of the course. Students expecting to teach should take this course.

Text: Methods of Teaching in High Schools, Parker.

303. School Administration. (3-0).

This course deals with the organization and management of State, county and city school systems; the qualifications, duties and relations of school boards, superintendents, principals and teachers; school finances; school architecture and equipment; school curricula; formation, enlargement and consolidation of school districts; certification of teachers, and the interpretation and application of the Texas School Law. The course is intended to give a general view of the educative systems of the State and of the nation. It is valuable for general information as well as for preparation to teach and to supervise schools.

Text: Administration of Public Education in the United States, Dutton & Snedden.

304. High School Problems. (3-0).

A study of the relation of the high school to elementary school, college and community; reorganization of curriculum with special attention to vocational subjects; equipment; discipline; daily schedules; records, and high school activities are included in this course. This is a detailed study of the administration of high schools, and is intended for those who are preparing to become teachers or principals of high schools.

Text: Principles of Secondary Education, Monroe.

401. Methods of Teaching. (3-0).

Same as course 302.

402. High School Agriculture. (3-0).

This course is a study of the specific problems that confront the teacher of agriculture in the high school. Among the topics discussed are: the selection of subject-matter suited to local conditions; the organization of courses of study; equipment, management of field plots; student agricultural organizations; extension work; and community interests. Students expecting to teach agriculture should take this course.

Text: Materials and Methods in High School Agriculture, Hummel.

403. Rural Education. (3-0).

The primary purpose of this course is to make a study of rural education in its broader sense, with a view of preparing teachers and extension workers for more efficient service in rural communities. Changes in rural education and social life, together with the factors effecting such changes, are observed. A detailed study of the rural community demands upon the school as a community center, and as an agency for rural life preparation, adds a new and interesting feature to the study of rural education.

Text: Rural Life and Education, Cubberley.

404. Agricultural Extension and Demonstration. (3-0).

This course gives a history of the development of agricultural extension and demonstration work, an account of differed types of organization, possibilities under the Smith-Lever Act, the work of other commercial and industrial agencies and the most effective methods to be employed. The purpose of this course is to give a survey of extension work by agricultural colleges, railroads, and other private agencies, to prepare for county demonstration work, and to train for efficient community service as teachers of agriculture in high schools. Agricultural Education 301, 302 and 403 are important to give preparation for this course, but they are not prerequisites. Lectures, assigned readings and problems constitute the work of the course.

405. Vocational Education. (3-0).

The fundamental purpose of this course is to present the proper correlation between industry and education as exemplified by agricultural colleges, negro institutions, Indian and trade schools. Surveys of the various types of vocational schools are made with a view of observing their effect upon present day educational systems.

Text: To be assigned.

406. High School Problems. (3-0).

Same as course 304.

407. School Administration. (3-0).

Same as course 303.

DEPARTMENT OF AGRICULTURAL ENGINEERING.

PROFESSOR GEE, ASSOCIATE PROFESSOR OLSEN, ASSISTANT PROFESSOR RHODES.

Agricultural Engineering comprises the theory and practice of engineering applied to farm conditions. In this department instruction is given in those subjects which relate especially to tilling, seeding, cultivating and harvesting machinery; farm powers and farm motors, including the installation, use, care and repair of gas engines, steam engines and boilers, windmills, automobiles, motor trucks, pumps, home lighting systems, design of farm buildings, use of concrete on the farm, irrigation, drainage and terracing.

These subjects are presented by lectures, recitations, laboratory exercises and practical field demonstrations. The laboratory is equipped with most of the machinery that is used on a modern farm, including several different types of gas and steam engines, tractors and home lighting plants. The shop is supplied with tools sufficient for making repairs on farm machinery and pumps, and engines, also farm levels, rods and tapes for irrigation, drainage and terracing work.

The courses are as follows:

301. Farm Machinery. (2-2).

The practical study of all lines of farm machinery, tilling, seeding, cultivating, harvesting and fertilizing machinery.

Laboratory practice to consist of detailed study of the construction, adjustment, calibration and operation of all lines of farm machinery. Demonstrations and tests to be made under field conditions.

302. Repair of Farm Machinery. (1-4).

The practical method of repair, up-keep, and care of all kinds of farm machinery.

Laboratory practice consists of overhauling, repairing and painting of the College farm machinery, and the use of repair catalogues, babbit solder, simple wood and iron working tools.

Prerequisite: Agricultural Engineering 301.

303. Farm Buildings. (2-4).

The study of building materials, design and construction of farm buildings, and building location. Ventilation, lighting, heating, water supply, plumbing, sewage disposal will be studied briefly in their relation to rural conditions.

Text: Farm Buildings, Eckblaw.

Practice in the care and use of drawing instruments. Complete working drawings, with tracings and blue prints of some farm building will be made.

304. Drainage. (2-2).

A study of the principles of farm drainage with both open ditches and tile drains; the design and location of drainage systems, including silt traps, catch basins, and outlet bulkheads. The Texas drainage district law will be studied briefly.

Text: Engineering for Land Drainage, Elliott.

Practice to consist of laying out a complete drainage system with necessary profiles, maps, and cost estimates.

Prerequisite: Civil Engineering 319.

305. Dairy Machinery. (1-2).

The practical study of the operation, care and repair of gas engines, and boilers, pumps, silage handling and feed grinding machinery. Attention will also be given to pipe fitting, soldering, babbiting and belting.

Laboratory practice to consist of operating, adjusting, and repairing gas and steam engines, pipe fitting, soldering, babbiting, and operating and adjusting feed grinding machinery.

306. Farm Motors. (2-4).

The practical study of the farm gas and steam engine, use, care and repair.

Laboratory practice will consist of the operation, care and repair of different types of farm gas and steam engines. Brake horse power, and fuel economy tests will be run by the students.

307. Farm Motors. (2-4).

Same as course 306.

401. Traction Engines. (1-4).

The practical study of the care, operation, and handling of both steam and gas tractors.

Laboratory practice to consist of the practical operation of tractors, making brake and drawbar tests when operating under field conditions; fuel economy tests will also be made.

Prerequisite: Agricultural Engineering 306.

402. Automobiles and Motor Trucks. (2-4).

The study of the construction, care, repair and operation of the gasoline automobile.

Text: The Gasoline Automobile, Hobbs and Elliott.

Practice to consist of tire repair, valve grinding, care of electric equipment, and general repair of the automobile and motor truck.

Prerequisite: Agricultural Engineering 306.

403. Irrigation. (2-2).

A study of the principles of irrigation practice, source of water supply and methods of application to various crops, the measurement and duty of water. Special attention will be given to pump irrigation.

Practice to consist of reports on bulletins and important irrigation investigations, also the laying out of ditches and irrigation systems.
Prerequisite: Civil Engineering 319.

404. Experimental Agricultural Engineering. (0-6).

A course for advanced undergraduates who are especially interested in solving some agricultural engineering problem.

405. Pumps and Power Problems. (3-0).

A study of elementary hydraulics and its application to farm pumping and water supply; the use of electricity for light and power, the use of rope with knots and splices, the design and equipment of the farm power plant and shop.
Text: Elements of Hydraulics, Merriman.

406. Farm Motors. (2-4).

Same as course 306.

407. Farm Motors. (2-4).

Same as course 306.

408. Terracing. (0-2).

Practice in differential and profile leveling, use of precise and home-made levels in location of terraces, adjustment of levels, construction of the broad terrace and soil saving dam. Trips will be made to terraced fields, and one or more lectures illustrated with slides will be given.

409. Farm Concrete. (1-4).

A study of the use of concrete on the farm.
Practice to consist of the design and construction of molds and forms, methods of reinforcing, and proportions of mixture to be used in various farm buildings and equipment.

411. Farm Machinery. (2-2).

Same as course 301.

413. Farm Buildings. (2-4).

Same as course 303.

FOR STUDENTS IN SHORT COURSES.

13. Farm Machinery and Farm Motors. (2-2).

This course gives the student a practical knowledge of the machinery and motors that are in use on modern farms.
Recitations and problems.
Text: Agricultural Engineering, Davidson.

The student will study in detail the construction, operation and adjustment of modern farm machinery and farm motors. Demonstrations and tests will be made under field conditions.

15. *Irrigation and Drainage.* (*1-4*).

A study of the principles of drainage and irrigation and the methods of handling drainage and irrigation water.

Text: Agricultural Engineering, Davidson.

Practice, in the use of surveying instruments in farm surveying and in laying out drainage and irrigation systems.

25. *Farm Machinery.* (*2-2*).

Same as course 301.

26. *Farm Motors.* (*2-4*).

Same as course 306.

27. *Farm Concrete.* (*1-4*).

Same as course 409.

53. *Farm Machinery and Farm Motors.* (*2-2*).

Same as course 13.

55. *Irrigation and Drainage.* (*1-4*).

Same as course 15.

56. *Repairing Farm Machinery.* (*1-4*).

Same as course 302.

57. *Farm Buildings.* (*2-4*).

Same as course 303.

58. *Automobiles.* (*2-4*).

Same as course 402.

59. *Tractors.* (*1-4*).

Same as course 401.

60. *Advanced Testing.* (*0-4*).

In this course the student will have an opportunity to run complete brake horse power, drawbar horse power and fuel economy tests on different engines. For students who plan to enter the implement and farm equipment business, special lectures and exercises in bookkeeping and advertising will be given.

EQUIPMENT.

The department is well equipped with apparatus for lecture and laboratory experiments. Through the generosity of numerous branch houses and manufacturers the laboratory is equipped with all the modern tilling, seeding, harvesting and fertilizing machinery that is in use on the Texas farm. The equipment includes several different types of feed grinders and crushers, seed cleaning and grading machines, centrifugal and piston pumps, hydraulic rams, farm lighting plants. The farm motors laboratory is equipped with twenty different types of stationary gas engines, including Gilson, R. & V., and Kreuger Atlas portable engines, seven different types of traction engines, including a Buckeye traction ditching machine, 50 H-P J. I. Case steam traction engine and road grader, two Hart-Parr kerosene tractors, a Bullock 75 H-P creeping grip tractor, a Holt caterpillar and a 30 H-P H. P. Rumley oil pull; Moline, P. & O., B. F. Avery, John Deere, and Spalding deep tilling engine plows. The laboratory is also equipped with testing instruments such as traction dynamometers, prony brakes, steam and gas engine indicators, planimeters and speed counters. The Studebaker corporation has donated a sectional model of a 35 H-P automobile chassis complete with electric starter. The irrigation and drainage laboratory is equipped with levels, ranging poles, rods, tapes, hand axes, pins, etc.; also with spades and drain cleaners for laying out farm drainage and irrigation systems.

DEPARTMENT OF AGRONOMY.

PROFESSOR MORGAN, ASSOCIATE PROFESSORS MCMILLAN, WOOD, MR. YOUNG, MR. REYNOLDS.

Agronomy comprises the theory and practice of the production of field crops. In this department instruction is given in those subjects which relate especially to the field and its affairs, such as soils, fertilizers and manures, farm crops, seed selection, farm management and plant breeding, crop ecology, etc.

These subjects are presented by means of lectures, recitations, laboratory exercises, collateral readings, farm excursions, etc. To the equipment and facilities which the department possesses for giving this instruction is added the opportunity for contact with the research work of the Experiment Station, especially along the lines of soil fertility and crop production.

The present-day farmer must have a knowledge of the fundamental principles underlying soil management and crop production, regardless of the system of farming to be followed, as these are basic. To produce maximum crops and at the same time keep the soil permanently productive requires both theoretical and practical knowledge. It is the purpose of this department to train the student along both of these lines.

The courses are as follows:

101. Elementary Crop Production. (2-2).

This course gives the student an elementary knowledge of the best practices involved in the production of field crops, including seed selection, the preparation of the seed bed, cultivation, etc. Crop rotation and its value is discussed in an elementary way.

Text: Field Crop Production, Livingston.

The practice work in this course comprises an elementary study of the different farm crops, both in the laboratory and field, noting particularly those points that constitute ideal seed plants. When opportunity permits, the improved practices involved in crop production will be studied in the field.

301. Soils. (3-4).

This course gives the student a rather comprehensive knowledge of the soil and its management. It is given according to the following outline:

(a) The soil as a medium for root development, including a study of rock and its products; the soil mass, together with the physical properties of the soil and their modification; the organic content of the soil.

(b) The soil as a reservoir for water, including the functions of water in plant growth; the amount of water in the soil; the movement of soil water, and the control of soil water.

(c) Plant nutrients in the soil, including a careful study of both micro-organisms and macro-organisms, as they influence soil productiveness.

(d) The soil air; composition and functions of.

(e) Heat of the soil; comprising a study of the sources, functions and means of modifying soil temperature.

(f) External factors in soil management; tillage, crop adaptation, etc.

Text: Soils, Lyon and Fippin.

In the laboratory the student applies the principles learned in the class room to the actual management of soils.

Prerequisite: Chemistry 101, 102; Physics 101, 102.

302. Farm Crops. (4-2).

In this course, all the leading field crops are studied with regard to structure, composition, races and varieties, breeding or improvement, soils, rotations, fertilizers, together with tillage operations, harvesting and marketing.

Text: Field Crops for the Cotton Belt, Morgan; Forage Plants and Their Culture, Piper.

In the laboratory the student makes a careful study of the leading characteristic of the different crops; seeds are studied as regards purity, and other points that determine value.

Prerequisite: Agronomy 301; Biology 301, 302.

304. Soil Mapping. (1-4).

In this course special consideration is given to the methods employed in classifying soils, and the benefits derived from soil survey work.

In practice the students make a field study of the various soil types found in the surrounding locality. This area is surveyed and mapped according to the methods employed by the Bureau of Soils of the United States Department of Agriculture. In this work the student is taught the use of the plane table and map making.

Prerequisite: Agronomy 301.

401. Plant Breeding. (3-2).

A course dealing with the improvement of field crops. The relative merits and demerits of the various methods applicable to the improvement of our common field crops are considered in detail, such as selecting fluctuating variations, the selection of mutations, the isolation of elementary species and the use of hybridization. The influence of environmental factors on the improvement of crops is also discussed.

Students will study the different forms of variation, using plants growing in the greenhouse or that have been selected and mounted for laboratory work. As far as possible practice work will be given in making field selections relative to plant improvement. Some practice in hybridizing field crops will be given.

Prerequisite: Agronomy 302.

402. Farm Management. (3-4).

The application of all the principles taught in the various agricultural subjects to the business management of the farm. Farm problems and farm bookkeeping are featured. Different systems of farming are studied with reference to the equipment in land, labor, and capital for each, also crop rotations best suited to the different systems.

Text: Farm Management, Warren.

Practice work comprises a field study of available farms, planning and outlining systems of management best adapted to each. Attention is given to the general layout of farm, size and shape of fields, conditions of buildings, ditches, roadways, etc., and the necessary improvements are suggested.

Prerequisite: Agronomy 301, 302; Dairy Husbandry 102; Horticulture 201, 202.

403. Cost Accounting. (2-2).

In this course special attention is given to the study of farm inventories, work reports, farm records and methods of keeping farm cost accounts.

Practice work will include the analysis of farm inventories, the preparation of work reports, keeping cost accounts with single crop and stock enterprises, and the preparation and analysis of at least two complete sets of farm accounts.

404. Marketing Problems. (3-2).

The aim of this course is to familiarize the student with important problems pertaining to the marketing of farm products that may be controlled by the individual, rather than the more general economic aspects of the subject of marketing. Distinctly technical phases of the subject such as pertain to grading, packing, and storing are featured.

Practical applications of the principles developed in the class room are worked out in the laboratory. In connection with the practice a study of marketing conditions actually prevailing at some important market center of the State will be made, providing such can be arranged. Students electing the course should plan for this trip.

405. The Use of Fertilizers and Manures. (2-2).

A thorough course dealing with soil requirements as regards fertilizers; methods of determining the fertilizer needs of soils; correct fertilizer practices with reference to the important field crops; lime and its use on the farm; the care, management and use of barnyard manure, and the use of green manure in soil improvement.

The fertilizer requirements of various soils for a number of crops will be determined by pot tests. The secondary effects of fertilizers and manures on soils will be studied in the laboratory. When opportunity permits, field excursions will be taken for the purpose of observing farm practices with fertilizers and manures.

Prerequisite: Agronomy 301, 302.

406. Advanced Farm Management. (1-4).

Advanced study of regions, types and methods of farming; discussions of efficiency factors and specific problems on the farms visited in practice.

Field trips to farms in various regions. Complete data will be collected from which a detailed study of the efficiency of the farm business will be made. At least two all-day trips will be provided for.

Must be accompanied by Agronomy 402.

408. Advanced Soils. (2-2).

This course is intended for the student who wishes to make a specialty of soil study. It deals especially with systems of soil management with reference to permanent soil productiveness. Recent literature bearing on the subject is discussed and the results of some of the leading soil investigations studied.

In the soils laboratory special fertility problems will be studied.

Prerequisite: Agronomy 301.

FOR STUDENTS IN SHORT COURSES.

21, 22. Elementary Agriculture. (3-2).

This is an elementary course, the object of which is to introduce the student to the field of agriculture as a whole. The farm and its affairs, soils, field and garden crops, farm animals and their care are given elementary consideration.

Text: Beginnings in Agriculture, Mann.

Practice will consist of elementary demonstrations and practicums in soils, crop judging, plant propagation, animal judging, etc.

23. Soils. (3-2).

A study of the origin, structure, texture and crop adaptations of agricultural soils. Soil fertility and its maintenance; manures, fertilizers, cover crops, fallowing, fall and spring plowing, crop rotations, diversification and the renovation of worn-out soils will receive attention in their proper order. This course is designed to meet the more practical needs of the two-year student.

Recitations and lectures.

Text: Soils, Fletcher.

Laboratory and field studies on the water-holding capacity of soils, capilarity, the influence of organic matter on the physical properties, lime and its effects, etc.

24. Crop Production. (3-2).

This course will include a rather thorough treatment of all the principal Southern field crops, giving special attention to methods of breeding, preparation of the seed bed, cultivating, harvesting and storing.

Text: Southern Field Crops, Duggar.

A laboratory and field study of the various field crops, noting particularly those points that constitute ideal seed plants. When opportunity permits, the improved practices involved in crop production will be studied in the field.

26. Farm Crops. (3-2).

In this course a brief consideration is given to the methods of producing, harvesting and storing all of the principal field and forage crops.

Text: Farm Crops, Burkett.

Judging of various crops and crop products, seed testing, seed selection, and field excursions for studying improved practices involved in crop production.

52. Farm Equipment and Management. (3-2).

A comprehensive study of the farm from an economic and business standpoint. Such topics as the planning and organizing of the farm with respect to available resources; farm labor; wages; rents and lease systems; contracts; farm accounts; farm advertising and salesmanship; efficiency; and the principal rural problems will be studied.

Text: Farm Management, Boss.

Students will be required to work out a problem consisting of the planning, equipping and managing of a given farm on an ideal plan for a period of several years. Excursions to representative farms, and agricultural surveys will be undertaken as opportunity may permit.

53. Soils. (3-2).

Same as course 23.

54. Crop Production. (3-2).

Same as course 24.

56. Farm Crops. (3-2).

Same as course 26.

DEPARTMENT OF ANIMAL HUSBANDRY.

PROFESSOR BURNS, ASSOCIATE PROFESSORS BELL, BURK, ASSISTANT PROFESSORS MAGEE, CONWAY.

The courses in the Department of Animal Husbandry may be grouped under the four main heads:

(1) The Judging of Live Stock.
(2) The Breeding of Live Stock.
(3) The Feeding of Live Stock.
(4) The Management of Live Stock.

These are arranged to follow each other in proper order so that they may be best understood by the students, and most clearly taught by the instructor. Every effort is made to make every course in Animal Husbandry contribute to the better understanding of the others, and all unite in embracing the subject completely. Special efforts are made in every course to present the useful side, and also to devote as much time as possible to the practices. The courses are designed to give the student a thorough understanding of the live stock business in all its phases and to better fit him for work in this line, whether it be stock farming, ranching, teaching or investigation.

The courses are as follows:

101. Judging Market Types of Cattle and Sheep. (0-4).

The lectures are explanatory of the various classes and grades of cattle and sheep recognized in the leading stock markets. The points of these and their value to the stockman, the butcher and the consumer are fully discussed. The practice embraces a thorough training in the scoring of fat cattle and fat sheep; supplemented by the study of dressed carcasses as far as possible. In this course lectures are also given on the type and function of the dairy cow and thorough training is given in the scoring of dairy cattle. Comparative judging constitutes an important part of the work.

Text: Types and Market Classes of Live Stock, Vaughan.

102. Judging Market Types of Horses and Swine. (0-4).

The classes and grades of horses and swine recognized in the leading markets are discussed fully. The distinction of classes, and their importance, is made clear by the further use of the score card. Comparative judging is also an important feature in this course.

104. Farm Poultry. (1-2).

This is a general course on Farm Poultry and treats of the breeds and types of poultry; the principles of breeding and mating of fowls; incubation and brooding; feeding for growth and egg production; winter and summer management; housing and hygiene; sanitation; disease; parasites and their treatment; preparing poultry for market, marketing. It deals with the practical application of these principles to general farm conditions.

Text: Poultry Production, Lippincott.

The practice work consists of the study of breeds and types, incubators and brooders, housing, judging of fancy and utility poultry, candling and grading of eggs and poultry products, killing and dressing poultry.

202. Judging Breed Types of Horses, Cattle, Sheep and Swine. (2-2).

The lectures in this course treat of the origin, history, characteristics and adaptability of the various breeds of live stock. As far as the equipment in live stock will permit, the student is shown by means of representative animals the best type of the breeds of horses, cattle, sheep and swine.

Text: Types and Breeds of Farm Animals, Plumb.

The score cards of the different breed associations are used in determining the merits of the animals, and these are further explained in the lectures. An important part of the practice consists of comparative judging similar to that of the show ring.

Prerequisite: Animal Husbandry 101, 102.

301. History and Development of Breeds. (2-2).

A study of the origin, improvement, adaptability, and characteristics of the important breeds of horses, cattle, sheep and swine. The foundation of the breeds, their subsequent development, and the special breed features and qualities are given full consideration, with the view of acquainting the student with the conditions for which each breed is suited. The text is supplemented by assigned readings.

Text: The Breeds of Live Stock, Gay.

Practice consists of judging representatives of the various breeds, applying the official standards as adopted by the breed associations.

Prerequisite: Animal Husbandry 202.

302. Animal Breeding. (2-2).

A study of the principles of animal improvement which form the basis of proper selection and mating for the production of pure bred live stock and market animals. The course includes a discussion of the subjects of reproduction, variation, heredity, selection, and the various methods of breeding, which include line breeding, inbreeding, crossing, grading, and other subjects connected with the breeding and improvement of farm animals.

Text: Breeding Farm Animals, Marshall.

Practice consists largely of a study of the results obtained with the various breeds comprising the College herds. Training is given in the use of herd books, which involves the tabulation of pedigrees of representatives of the different breeds.

Prerequisite: Animal Husbandry 301; Biology 301.

401. Animal Nutrition. (3-2).

This subject involves a study of the fundamental principles of live stock feeding, including the composition and digestibility of feeding stuffs, the disposition made of the different feed constituents by the animal organism, and, finally, the methods of calculating rations for the various classes of farm animals,—horses, cattle, sheep, and swine. Students are required to use a text-book and that is supplemented by lectures.

Text: Feeds and Feeding, Henry.

The practice consists chiefly in calculating rations and in working out problems relating to the economic side of live stock feeding.

Prerequisite: Chemistry 201.

402. Live Stock Feeding. (3-2).

This course treats of the practical application of the principles taught under the subject of animal nutrition. It embraces a thorough study of horse, mule, cattle, sheep, and swine feeding investigations, and of the practical feeding operations of the most successful stockmen with special reference to Texas conditions. Lectures supplement the text in the presentation of the course.

Text: Feeds and Feeding, Henry.

In the practice, students are required to keep in close touch with all feeding tests that the Experiment Station has in progress, to make abstracts of Experiment Station bulletins relating to live stock feeding tests of this and other stations, and to gain experience in compounding rations for various purposes from limited selections of feeding stuffs.

Prerequisite: Animal Husbandry, 401.

403. Advanced Judging. (1-4).

The lectures of this course treat further of the most approved types of pure-bred animals and of those used for the common market.

Classes of the different kinds of live stock are selected as similar as possible to those which come together in the show rings of exhibitions and the work of competitive judging among the students is given much prominence.

Prerequisite: Animal Husbandry 302.

404. Live Stock Management. (2-2).

The raising of horses, cattle, sheep, and swine, as a business, is discussed in full detail, covering all features of management in production and marketing. The management of stock farms and ranches is fully treated. A study is made of the methods used by some of the most successful stock farmers and ranchers of Texas and other States. Special attention is given to the management of pure-bred herds and flocks and to the keeping of private herd and flock records.

The practice in live stock management consists of actual work in preparing different classes of stock for show and sale. The student is given instruction in trimming sheep, washing and curling the coats of cattle and polishing horns and hoofs. The work on horses consists of grooming, fitting of harness, and decorating manes and tails.

Prerequisite: Animal Husbandry 302; must be accompanied by Animal Husbandry 402.

405. Herd Book Study. (*0-4*).

The first part of the work consists of training in the intelligent use of herd books, involving practice in the tabulation and study of pedigrees of famous animals. This is followed by a study of the blood lines of the breed or breeds of live stock which the student intends to produce, in order to familiarize him with the best strains and individuals of the breed. Practice is also given in the necessary incidentals connected with the registration of animals, such as the rules of entry, application for transfer, etc.

Prerequisite: Animal Husbandry 302.

407. Poultry Feeding and Management. (*2-2*).

This course is an application of the principles involved in the management and feeding of fowls for egg production and for fattening. Problems of interest to individual members of the class will receive attention.

Practice will include the management of a pen of chickens by each student for four weeks, keeping detailed records of cost of feed, production, and all operations connected with the work.

408. Incubation and Brooding. (*2-2*).

This course consists of the care of an incubator by each student through the incubator period. A careful study of incubation and brooding will be made, also a detailed study of the literature on the subject. Problems of interest to the individual members of the class will also receive attention.

Practice will include the management of an incubator by each student for four weeks, testing the eggs, bringing off the hatch, and keeping careful records of all cost, temperature, fertility of eggs, and the like.

FOR STUDENTS IN SHORT COURSES.

21. Judging Market Types of Horses, Cattle, Sheep and Swine. (*0-6*).

In this course students are given thorough training in scoring and judging market types of horses, cattle, sheep and swine. The points of these and their value to the stockman, the butcher, and the consumer are fully discussed. A study of dressed carcasses is made.

Text: Types and Market Classes of Live Stock, Vaughan.

22. Judging Breed Types of Horses, Cattle, Sheep and Swine. (*2-2*).

A modification of Animal Husbandry 202.

Text: Types and Breeds of Farm Animals, Plumb.

Prerequisite: Animal Husbandry 21.

51. Judging Market Types of Horses, Cattle, Sheep and Swine. (0-6).

Same as course 21.

52. The Breeding of Live Stock and the Study of Pedigrees. (1-2).

The lectures in this course treat of the principles of breeding and the methods used in the practice of breeding horses, cattle, sheep and swine,—pure-bred animals, as well as those for the common market.

Text: Breeding Farm Animals, Marshall.

The practice consists principally of the study of pedigrees. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite: Animal Husbandry 22.

53. Judging Breed Types of Horses, Cattle, Sheep and Swine. (2-2).

Same as course 22.

54. Farm Poultry. (2-2).

A somewhat broader course than Animal Husbandry 104, dealing with the practical application of the principles of poultry husbandry to general farm conditions.

Text: Poultry Production, Lippincott.

The practice is practically the same as in course 104.

55. Live Stock Feeding. (2-2).

This course embraces a study of the feeding of all classes of farm animals, horses, cattle, sheep and swine. The subject of animal nutrition, the composition of available feeding stuffs and the calculating of rations, are treated fully.

Text: Productive Feeding of Farm Animals, Woll.

The practice consists largely of calculating rations for different classes of farm animals, special attention being given to the study of Texas grown feeding stuffs.

56. Live Stock Feeding. (2-2).

Same as course 55.

DEPARTMENT OF ARCHITECTURE AND ARCHITECTURAL ENGINEERING.

PROFESSOR ADELSPERGER, MR. BURTON.

Every day in theory courses students are required to write quizzes covering some part of the text assigned. The balance of the hour is utilized by the instructor in explaining obscurities or in developing the topic under discussion. In addition related themes, drawings and problems are required from time to time.

In design practice thoroughly practical methods are used. "Design" is admittedly the *crux* of any course in architecture.

To teach it, problems of increasing complexity are given for solution. This is a logical and universal method. Opinions, however, differ over the proper nature of the problems. Some are enthusiastic for the European system in which *projets,* always of a monumental character, are planned with an eye to beauty without regard for cost. Making the broadest generalizations, the tendency of such planning is to concentrate the student's attention upon the *picture* which the building will make, with the consequent development of a gay, graceful and charming exterior at frequent expense to interior utility, economy and convenience. Indeed, the lack of cost-restraint often results in over-gaiety, just as unlimited real money does in real life.

That system is not followed here. The College wishes to stand for saner, simpler, more dignified and more useful things in architecture. Accordingly, the programs of the design problems will not continually begin, "A gentleman of wealth" or, "A gentleman of great wealth," but generally will be succinct statements of the accommodations to be put into given buildings on a site of definite size and within a given number of cubic feet, and in compliance with the building laws as defined in the new Underwriters' Code. The problems will be real problems, and the student will be encouraged to solve them in that spirit, and to bring to the solution whatever of dignity and beauty lies within him.

Design problems will be classified as Major and Minor, and students' solutions, if of sufficient merit, will be graded as Passes, Mentions and First Mentions, counting 3, 4 and 5, and $\frac{1}{2}$, $\frac{3}{4}$ and 1 point, respectively. While the Design courses are catalogued as first and second term practices, promotion from one to another will occur whenever the required points are accumulated, whether that be before or after the term examinations. This statement applies to courses in Architecture 201, 202, 301, 302, 303, 304, 401, 402, 403 and 404.

For purposes of comparison, the following are held to be equivalents:

One hour one year of theory;
Two hours one year of experiment practice, involving written reports;
Three hours one year of design practice, involving some research, and
Four hours one year of shop work or free-hand practice.

The courses in Architecture are as follows:

101, 102. Elements. (0-9).

The correlation of plans, elevations and sections; lettering; mouldings, the orders, architectural elements; conventional rendering; 16 plates in line; 6 in wash.

106. Elements of Design. (1-0).

Explanations of the form and proportions of such details as columns, walls, windows, doors, cornices, and roofs; their proper grouping and arrangement.

Daily quarter-hour written quizzes, tracings, short themes, lectures.

Text: American Vignola, Ware.

201. Design. (0-12).

Tracings and simple order problems involving elementary composition; 11 points required.

Prerequisite: Architecture 101, 102, 106.

202. Design. (0-12).

Order problems of greater complexity. Elementary design problems; 11 points required.

Prerequisite: Architecture 201.

205, 206. Carpentry. (2-0, 3-0).

Woods, lumber, woodworking, framing, finishing, interior details. Hardware, paint and varnish. Roofings.

Daily quarter-hour written quizzes; tracings; lectures.

Texts: Building Construction, Part 2, Kidder; Paint and Varnish Catechisms, Heckel.

207, 208. History of Architecture. (2-0).

Egyptian, Western Asiatic, Greek, Roman, Early Christian, Byzantine, Romanesque and Gothic styles.

Daily quarter-hour written quizzes; tracings; research; lectures.

Text: A History of Architecture, Fletcher-Fletcher.

209. Theory of Design. (1-0).

The underlying principles of pleasing composition.

Daily quarter-hour quizzes; research; lectures.

Text: Architectural Composition, Robinson.

301. Design. (0-15).

Tracings, sketches and design problems; 11 points required.

Prerequisite: Architecture 202.

302. Design. (0-15).

Working drawings, archæology and design problems of greater difficulty; 11 points required.

Prerequisite: Architecture 301.

303. Structural Design. (0-12).

Tracings, sketches, and mill factory design; 11 points required.

Prerequisite: Architecture 202.

304. Structural Design. (0-12).

Working drawings, mill construction and advanced masonry design; foundations; 11 points required.

Prerequisite: Architecture 303.

305. Masonry. (3-0).

Materials and methods of construction in brick, stone and concrete; foundations; plastering.

Daily quarter-hour written quizzes, tracings, sketches, experiments; lectures.

Text: Building Construction, Part I, Kidder.

306. Steel Construction. (2-0).

Skeleton framing in steel, designing of sections, fire-proofing.

Daily quarter-hour written quizzes, tracings, problems; lectures.

Texts: Building Construction, Part I, Kidder; Pocket Companion, Carnegie Steel Co.

Prerequisite: Architecture 305.

307. Plumbing. (2-0).

Water supply, sewage disposal, plumbing, housing conditions.

Daily quarter-hour written quizzes, tracings, lectures.

Texts: Principles and Practices of Plumbing, Cosgrove; Handbook on Sanitation, Price.

308. Heating and Ventilation. (2-0).

Direct and indirect methods of heating by steam and hot water. Furnace heating. Plenum and vacuum fans.

Daily quarter-hour written quizzes, tracings, problems; lectures.

Text: Heating and Ventilation, Hubbard.

309. History of Architecture. (2-0).

Renaissance, Indian, Chinese, Japanese and Saracenic styles. Modern architecture.

Daily quarter-hour written quizzes, tracings, research; lectures.

Text: A History of Architecture, Fletcher-Fletcher.

Prerequisite: Architecture 207, 208.

310. Historic Ornament. (2-0).

Ornament and its applications to objects of art and in architecture.
Daily quarter-hour written quizzes, tracings, color sketches, research; lectures.
Text: A Manual of Historic Ornament, Glazier.
Prerequisite: Architecture 309.

401. Design. (0-15).

Advanced archæology and design problems; 11 points required.
Prerequisite: Architecture 302.

402. Design. (0-18).

Municipal planning and monumental design problems; thesis design; 11 points required.
Prerequisite: Architecture 401.

403. Structural Design. (0-15).

Industrial developments in steel and reinforced concrete; 11 points required.
Prerequisite: Architecture 304.

404. Structural Design. (0-15).

Skeleton construction. Structural thesis; 11 points required.
Prerequisite: Architecture 403.

NOTE.—With the approval of the Head of the Department, students in courses 402 and 404 may collaborate in thesis design.

405. History of Sculpture. (1-0).

Ancient and modern sculpture, especially as a coherent element of architectural composition.
Daily quarter-hour written quizzes, tracings, sketches; lectures.
Text: History of Sculpture, Marquand and Frothingham.

406. History of Painting. (2-0).

Modern painting and mural decoration.
Daily quarter-hour written quizzes, color sketches; lectures.
Text: A History of Painting, Van Dyke.

408. Business Practice. (2-0).

Office management. Specifications. Contracts. Ethical conduct.
Daily quarter-hour written quizzes; lectures.
Text: The Law of Contracts, Wait; Documents of the American Institute of Architects.

409. Fire Prevention Engineering. (2-0).

Insurance surveys, remedial construction, fire and life hazards and preventive measures.

Daily quarter-hour written quizzes, problems; lectures.

Text: Documents of the National Fire Prevention Association.

Prerequisite: All construction courses scheduled in Sophomore and Junior years

410. Building Codes. (*2-0*).

Organization of Building Commissioners' offices, duties of inspectors, comparison of codes.

Daily quarter-hour written quizzes, inspection; lectures.

Text: The Underwriters' Code, Woolson.

Prerequisite: Architecture 409.

419. Theory of Design. (*1-0*).

Same as course 209.

EQUIPMENT.

The department has a fair library of valuable books, several thousand plates in ring books, a lantern and slides, and a number of well chosen casts—to all of which additions constantly are being made. Students of architecture have, of course, access to the equipment of other departments in which they are taking work.

DEPARTMENT OF BIOLOGY.

PROFESSOR BALL, ASSISTANT PROFESSORS HAYDEN, CASSIDAY, HUTCHINSON, MR. REED, MR. CAMPBELL.

The work of this department is designed to furnish the student with that accurate and thorough knowledge of the structure and functions of plants and of animals which is essential for those who purpose engaging in the arts of agriculture and horticulture.

Instruction is given by lecture and text, but especial emphasis is laid upon the work of the laboratory, where every effort is made to induce in the student habits of independent observation and thought.

The work of the department falls into the following divisions:

BOTANY.

101, 102. Economic Botany. (*3-2*).

The morphology and systematic relations of plants are studied in this course, which begins with an outline of the external and internal form and structure necessary to the more extended work in the physiology of the plant. The second term is devoted to systematic and ecologic botany in which the student is trained to identify plants, using as a basis his knowledge of their structure, and to apply both structure and function in accounting for their life relationships. Especial attention is given to plants of economic importance.

Text: College Botany, Atkinson.

The laboratory work is planned to illustrate the lectures, but more especially to train the student to acquire facts of structure and function by direct observation. In order to insure careful and correct interpretation of what is seen, each student is required to keep a note-book in which he records by drawings and notes the results of his work.

103, 104. General Botany. (*3-2*).

This course is designed to give a broader and deeper insight into the structure and physiology of the plant than the preceding. The first term will be devoted largely to physiology, the second to morphology and taxonomy.

Text: A Text-book of Botany, Coulter, Barnes & Cowles.

Practice: first term, experimental plant physiology; second term, plant structure. In both terms a note-book containing accurate recording of observations will be required.

303. Plant Physiology. (*2-4*).

An advanced course in physiology is here offered in which the functions of respiration, assimilation and nutrition receive especial attention. The course is designed for those who wish to pursue work of higher character in the field of general agricultural botany and at the same time to give, in the practical work, an introduction to the methods of research.

Text: Vegetable Physiology, Green.

Laboratory manual, Practical Physiology of Plants, Darwin & Acton.

304. Plant Ecology. (2-4).

In this course plants are studied in their relation to environment. Especial attention will be placed upon the more important stimuli of temperature, moisture, and light, and upon the method in which the plant adapts itself to meet changed conditions in each of these.

Text: Plant Physiology and Ecology, Clements.

Practice will consist of laboratory and field studies of the growing plant and of its relation to environment.

311, 312. Plant Physiology. (2-4).

The course of study deals with the life processes of plants; their physiological relations to soil and atmosphere; the functions and interrelations of the various plant tissues; the sources, manufacture, storage and utilization of food materials. The course is fundamental to a scientific handling of plants.

Text: To be assigned.

Practice and theory are parallel. Primary importance is accorded to practice.

403, 404. Plant Diseases. (2-4).

The structure, physiology and classification of fungi are studied in the first term; in the second, types of the most important plant diseases occurring in the State are selected for study and the student is trained to identify the cause of the trouble and is shown the methods of spraying and of other corrective measures. Plant diseases due to other causes receive attention within the limits of time and material.

Text: Fungus Diseases of Plants, Duggar.

In the first term the student will become acquainted with the form and structure of selected fungi, and will learn the routine methods of cultivation, experimentation, etc. In the second term, diseased plants are placed before him, and he is instructed in the diagnosis of each with its appropriate treatment.

405. Plant Nutrition. (2-4).

Plant processes and products are studied with respect to their physical and chemical relationships. The course is designed as an introduction to research work.

Text: To be assigned.

Reference books: Principles of General Physiology, Bayliss; Physical Chemistry, Philip; Chemistry of Plants, Haas and Hill.

407, 408. Systematic Botany. (*2-4*).

This course is designed to give the student such thorough training in the systematic relationships of flowering plants as to enable him to determine by sight the family and generic groups so that with little further application species may be determined. Special attention will be given to comparative study of the structures upon which modern system is based. From the beginning emphasis will be placed upon physiographical ecology.

Reference book: New Manual, 7th edition, Gray; Flora of the Southern States, Chapman; Illustrated Flora of the Northern States and Canada, Britton and Brown.

This consists of both field and laboratory work. In the field the student will collect material and make notes on ecological conditions. In the laboratory, he will be trained in methods of taxonomy.

ZOOLOGY.

201, 202. General Zoology. (*2-2*).

This course offers a general survey of the animal kingdom, beginning with the lowest forms of animal life. The structure and physiology of types from the various groups will be considered, together with the principles of classification. Some attention also will be given to the development and distribution of animals.

Text: College Zoology, Hegner.

Careful dissection and study of types selected from the various groups, with notes and drawings, will be made in the laboratory.

301. Embryology of the Domestic Animals. (*1-4*).

This course begins with a study of cell division and of the origin of the spermatozoon and of the egg-cell. The process of fertilization is then taken up, followed by a study of the development of the embryo of the bird and of the mammal.

Text: Introduction to Vertebrate Embryology, Reese.

Practice in this course consists of a study of the cell, with especial relation to the phenomena of division and maturation; of the egg of the chicken in its course of development, and of the development of the pig embryo.

Manual, Laboratory Outlines for Embryology, Harman.

313. Animal Histology. (*2-4*).

A term course in the microscopic anatomy of animal tissues. A careful study will be made of the cell and its structure, and of the various tissues which make up the animal body.

Text: To be assigned.

Practical work in the study of the cell and of animal tissues, and training in the technique of zoological laboratory methods.

Prerequisite: Biology 201, 202.

314. Embryology. (2-4).

This course differs from Biology 301, in that it goes more deeply into the subject, takes up the problems of heredity, and deals with the comparative development of the various classes of vertebrates.

Text: To be assigned.

The development of type animals will be studied. The student will prepare all material for himself, thus gaining familiarity with embryological technique.

Prerequisite: Biology 313.

411, 412. Advanced Invertebrate Zoology. (2-4).

This course will be adapted to the particular needs of the student electing it. As a rule, it will include a detailed study of the three great groups of parasitic animals: Protozoa, parasitic worms, and Arthropoda (other than insects). Especial emphasis will be laid on the life-history of the forms studied, and thus on their control and prevention.

Text: To be assigned.

Laboratory and field studies of the groups above mentioned. The student will be required to work out the life-history of at least one animal of economic importance.

Prerequisite: Biology 201, 202.

413, 414. Advanced Vertebrate Zoology. (2-4).

This course, like the preceding, will vary slightly with the needs of those electing it. Normally it will be a study of the comparative anatomy of the vertebrates.

Text: To be assigned.

This will consist largely of anatomical studies from dissections made by the student himself.

Prerequisite: Biology 201, 202.

BACTERIOLOGY.

302. Rural Sanitation. (2-4).

This course presents an outline of the relation of bacteria to everyday life, at home and on the farm. The rationale of sanitation in and about the home; the construction and operation of sewage disposal plants suitable for use in villages and in the country; the relations of bacteria, insects and vermin to the health of man and animals are carefully considered.

Text: Rural Hygiene, Brewer.

Laboratory study of bacteria and of their activities; methods of disinfection, etc.

306. General Bacteriology. (1-4).

This course is designed as an introduction to a more extended study of the nature and relations of bacteriology.

Text: General Bacteriology, Frost and McCampbell.

Preparation of culture media; of pure cultures, staining and microscopical technique; methods of identification, etc.

Laboratory Manual: Laboratory Methods for Beginners in Bacteriology, Moore.

309, 310. General Bacteriology. (2-4).

In this course, the general nature and relations of bacteria are considered in the first term, as exhibited by the study of selected types. In the second, the relations of bacteria to agricultural pursuits, in soil-building, dairy processes, various fermentations, etc., are examined.

Text: General Bacteriology, Jordan.

Preparation of culture media; of pure cultures; staining and microscopical technique; methods of identification, etc., occupy the time allotted in the first term. In the second, the student will make analyses of water, milk, sewage, etc.

Laboratory Manual: Laboratory Bacteriology, Frost.

322. Sanitary Bacteriology. (2-4).

The relations of bacteria and similar organisms to water and water supply are considered, with especial reference to the public health.

Text: Elements of Water Bacteriology, Prescott and Winslow.

Preparation of special culture media; qualitative and quantitative analyses of water.

401. Advanced Bacteriology. (2-4).

This course is designed for students who elect special work in bacteriology and will be adapted to the needs of the groups making the selection.

Text: To be assigned.

Prerequisite: Biology 306 or 302.

402. Soil Bacteriology. (2-4).

In this course the relation of bacteria to soil-building, nitrogen fixation and release; and similar activities receive attention.

Text: Agricultural Bacteriology, John Percival.

Preparation of special culture media; study of ammonification; nitrification, denitrification, etc.

Manual, A Manual of Bacteriology, Reed.

Prerequisite: Biology 306 or 302.

421. Sanitary Bacteriology. (2-4).

The bacteriology of sewage; sewage management and disposal; sanitary appliances, public and private, are thoroughly considered.

Text: Sewage Disposal, Kinnicutt-Winslow and Pratt.

423. General Bacteriology of Water and Sewage. (1-6).

This course is designed for engineering students who desire more elementary instruction in sanitary bacteriology, but who, at the same time, wish to gain a working knowledge of the methods of bacterial analyses and their practical applications.

Text: Water Supply, Mason.

Technical operations; methods of analyses of water and sewage; applications to public and private health, etc.

Laboratory manual, Microscopy of Water, Whipple.

FOR STUDENTS IN SHORT COURSES.

11. Economic Zoology. (3-2).

A study of the familiar forms of animal life, with especial reference to those directly related to agriculture.

Text: Practical Zoology, Hegner.

The laboratory work consists of the dissection of a few familiar forms, together with observations of their physiology and mode of life.

Manual: Laboratory and Field Zoology, Hegner.

12. Economic Botany. (3-2).

Students in this course are offered work designed to present a clear outline of the fundamental facts of plant life upon which the intelligent handling and care of farm crops are based. The term opens with a study of the plant as a whole and this leads to the systematic and ecologic relationships especially of those used as cultivated crops.

Text: A Practical Course in Botany, Andrews.

The student is required to work out for himself and to make notes upon the structure of the plant and to use this knowledge in the systematic study of selected plants.

51. Economic Zoology. (3-2).

Same as course 11.

52. Economic Botany. (3-2).

Same as course 12.

53, 54. Economic Botany. (3-2).

Same as course 101, 102.

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

PROFESSOR HEDGES, ASSOCIATE PROFESSOR GORDON, ASSISTANT PROFESSORS BROWN, RAY, MR. PARMELEE, MR. OVERSTREET, MR. BRYANT.

Most of the work in this department is given by lectures, illustrated by experiments, and supplemented by laboratory work, with frequent oral and written quizzes. A broad foundation is laid in the beginning course in General Inorganic Chemistry, which extends through the Freshman year in all four-year courses.

CHEMISTRY.

The courses in Chemistry are as follows:

101, 102. General Inorganic Chemistry. (3-2).

In this course the foundation principles of all chemical activity are fully discussed and demonstrated. The chemical elements and their compounds are then taken up separately and systematically. Industrial applications of the more important chemical processes are briefly described, and organic chemistry is touched upon. This course must precede all other chemical studies. An elementary course in physics should precede or accompany this course.

Text: A Course in General Chemistry, McPherson and Henderson.

General laboratory work, duplication of lecture experiments, qualitative analysis, simple tests of technical importance.

201, 202. Organic Chemistry. (2-4, 3-4).

In this course the general principles and theories of organic chemistry, together with the general methods of preparation and synthesis of organic compounds, are treated in detail. Special attention is given to compounds of technical importance, thus laying a foundation for work in dyeing, in agricultural chemistry, in sanitary chemistry, and in many processes of industrial chemistry. Lectures.

Text: Organic Chemistry, Moore.

Preparation and properties of organic compounds.

Prerequisite: Chemistry 101, 102.

205. Qualitative Analysis. (2-8).

This course includes both the theory and practice of fundamental analytical operations and is designed to enable the student to make a rapid and accurate analysis of substances of average complexity, and to understand the steps by which his results are obtained. In theory the principles upon which the laboratory work is based are explained and discussed, and the student's knowledge rigorously tested by oral and written exercises.

The laboratory work consists of a study of the properties and reactions of the more common basic and acidic radicals, their separation and identification from mixtures, the methods of getting solids into solution for analysis and the analysis of unknown substances. The number of substances analyzed varies with their nature and complexity.

Prerequisite: Chemistry 101, 102.

206. Organic Chemistry. (2-2).

This course is designed to meet the requirements of students in agriculture. The general principles of organic chemistry are first considered, then a systemic study of the substances found in connection with plant and animal life is made.

Text: Organic Chemistry, Moore.

In the laboratory the student prepares a number of typical organic compounds and makes some determination of their physical constants.

Prerequisite: Chemistry 101, 102.

207. Quantitative Analysis. (1-4).

This course is designed to meet the requirements of civil, mechanical and textile engineering students, and is preparatory to advanced courses in those departments. The laboratory exercises are explained in detail, general deductions drawn, and the student's knowledge of the subject tested by short oral and written exercises. A considerable portion of the class-room time is devoted to chemical calculations involved in the practice.

The laboratory work consists of a number of carefully selected experiments in quantitative analysis designed to typify operations of general application.

Prerequisite: Chemistry 101, 102.

208. Technical Analysis. (1-3).

This course is designed to give, to students of civil and mechanical engineering, an insight into the methods employed in the analysis of materials connected with their professions, and the application of the results obtained to practical problems. The work in the laboratory is discussed and explained, and its application to engineering problems emphasized.

In the laboratory fuels, steels, cements, waters for industrial purposes, and industrial products that are commonly met with, are analyzed, by rapid technical methods. The assignment varies according to the course the individual student or the class is pursuing.

Prerequisite: Chemistry 207.

209. Geology. (3-2).

This course deals primarily with dynamical, and structural geology, but historical geology is briefly considered. Special attention is given to the weathering of rocks and minerals and its significance in the formation of soils.

The laboratory work will include the identification of the more common minerals and rocks.

Prerequisite: Chemistry 101, 102.

301, 302. Organic Chemistry. (2-4, 3-4).

Same as course 201, 202.

304. Agricultural Chemistry. (2-2).

This is a study of the fundamental chemical principles of agriculture, and in addition to giving the student a grasp of the application of chemistry it helps to understand the chemical terms used in Experiment Station literature. The chemistry of plant substances, soils, irrigation water, fertilizers, insecticides, and fungicides is studied.

The laboratory work serves to familiarize the student with the composition and behavior in the laboratory of many materials important in agriculture. It consists of the chemical analysis of soils, fertilizers, insecticides and fungicides.

Prerequisite: Chemistry 309.

305. History of Chemistry. (1-0).

This course puts the development of chemical theories in their historical setting and gives an intimate acquaintance with the lives of great chemists.

Prerequisite: Chemistry 101, 102.

306. Geology. (3-2).

This course consists of a study of dynamical, structural, and economic geology, with special emphasis on the non-metallic minerals. Considerable attention is given to the weathering of rocks and minerals.

Text: Engineering Geology, Ries and Watson.

The laboratory work will include the identification of thirty of the common rocks and thirty minerals, and special tests of non-metallic minerals having economic value.

Text: Tables for the Determination of the Common Minerals, Crosby.

Must be preceded or accompanied by Chemical Engineering 302.

307. Quantitative Analysis. (1-4).

Same as course 207.

308. Dyeing. (2-2).

This course consists of a study of the physical and chemical properties of textile fibers, dyes, dyestuffs, and mordants, together with the principles and appliances involved in the commercial coloring of textiles, especially cotton and woolen goods.

All the principles discussed in the theory are tested in the laboratory, with especial attention to the production of dyeing to meet particular commercial requirements.

Prerequisite: Chemistry 202.

309. Analytical Chemistry. (1-4).

This course is designed to prepare the students of agriculture for the work in agricultural chemistry. The preparation of standard solutions and the principles of quantitative analysis are discussed.

The laboratory work consists of the preparation of standard solutions, and the analysis of different materials as vinegar, limestone, and feedstuffs.

Prerequisite: Chemistry 201.

310. Water Analysis. (1-3).

This course is designed to impart a knowledge of the methods employed in the analysis of waters for industrial and potable purposes, of the interpretation of the results of such analyses, and of the methods employed in water purification. Attention is also directed to the nature and analysis of sewage, and its purification.

Prerequisite: Chemistry 307.

321. Physical Chemistry. (2-4).

This is an elementary course, emphasizing the phenomena which show the state of gaseous and dissolved substances.

Molecular weight determinations by vapor-density and freezing-point methods; heat of reaction; electrical conductivity; and electro-chemical preparations.

Prerequisite: Chemistry 201.

322. Qualitative and Quantitative Analysis. (1-4).

This course is designed to familiarize the student with the fundamental principles of qualitative analysis along with advance work in quantitative analysis. In theory the principles upon which the laboratory work is based are explained and discussed, and the student's knowledge of the subject tested by short oral and written exercises.

The laboratory work consists of qualitative analysis and a number of carefully selected experiments in quantitative analysis.

Prerequisite: Chemistry 309.

405. History of Chemistry. (1-0).

Same as course 305.

406. Geology. (3-2).

Same as course 306.

407. Quantitative Analysis. (1-4).

Same as course 207.

408. Quantitative Analysis. (*1-3*).

This course is designed to familiarize students in textile engineering with the methods employed in the analysis of size compounds, and with the properties of the various substances they contain. In the early part of this course experiments are conducted to test the purity of the substances usually incorporated in sizes, and later analyses are performed on typical sizes and the purity of the constituents determined.

Text: The Chemistry and Practice of Sizing, Percy Bean.

Prerequisite: Chemistry 407.

421. Advanced Agricultural Analysis. (*2-8*).

In this work the methods of exact analysis are discussed and the chemistry of every step explained. It supplies a basis for the work in advanced agricultural chemistry.

The official methods of analysis are used throughout the practice work; but other methods are frequently used for comparison.

Prerequisite: Chemistry 302.

422. Advanced Agricultural Chemistry. (*2-8*).

Studies are made of selected topics concerning the chemistry of soils, plants, or animal nutrition, in such a way as to give the student a knowledge of the methods used in agricultural investigation, and to aid him to develop habits of independent thought.

The student is required in this work to take up some special problem in agricultural chemistry or to work on some chemical phase of some problem simultaneously pursued in some other department.

Prerequisite: Chemistry 421.

424. Dairy Chemistry. (*2-4*).

The object of this course is to study the composition of milk and the principal chemical changes that take place in the handling of it, and in its manufacture into butter and cheese.

The laboratory work consists in the analysis of milk, butter, oleomargarine, and cheese, and the testing for adulterants.

Prerequisite: Chemistry 302.

FOR STUDENTS IN SHORT COURSES.

22. Practical Chemistry. (*3-4*).

The course is intended to familiarize the engineering student with chemistry and its relation to daily life. The elementary principles of inorganic chemistry are first considered. This is followed by a brief study of the composition and relation of chemistry to the following materials: Carbon and its compounds, glass, cement, alloys, paints, oils, varnishes, leather, silk, wool, cotton, rubber, soils, fertilizers and insecticides.

Text: Chemistry and Its Relation to Daily Life, Kahlenberg and Hart.

Preparation and testing of materials discussed in the theory.

51. Practical. (*3-2*).

This course is intended to familiarize the students of agriculture with the facts underlying the more important chemical processes involved in agricultural operations, such as fertility of soils, plant growth, fertilizers, and the digestibility of feeds. The elementary principles of inorganic chemistry are first considered.

Most of the principles discussed in the theory are confirmed by the student in the laboratory.

EQUIPMENT.

The department has the usual laboratory facilities, including a vacuum system for rapid filtration, a compressed-air system for use with blast lamps and a ventilating system. The laboratories are supplied with hydrant, cistern and distilled water. Each student is assigned to a lock-desk containing the necessary equipment. The large lecture room, with raised seats, has a seating capacity of one hundred. The museum occupies a large, well lighted room. The department has a good reference library.

CHEMICAL ENGINEERING.

The foundation for the work in chemical engineering is laid in the courses in chemistry, already described. Chemistry and chemical engineering cover such a broad field that in the Senior year students are advised to specialize in some branch of technical analysis, such as the chemical control of a cement plant or of a cottonseed plant. All the work is supplemented by laboratory work. The chemical industries most highly developed in this State are inspected from time to time.

The courses in Chemical Engineering are as follows:

202. Elementary Quantitative Analysis. (*1-6*).

This course serves as an introduction to the methods of exact analysis, and is regarded as preliminary training for the more advanced courses. In the class-room the practice and theory of the laboratory exercises are dealt with by lectures and recitations. Special attention is given to stoichiometry.

Text: Notes on Quantitative Chemical Analysis, Foulk.

The laboratory work consists of a number of carefully selected experiments in quantitative analysis designed to typify operations of general application. The work is first gravimetric, then volumetric. In the early periods compounds of known composition and purity are analyzed but later substances of industrial significance, whose percentage composition is known only to the instructor are undertaken. Near the close of the term an analysis is made of a carbonate or silicate rock for the commonly determined constituents.

Prerequisite: Chemistry 205.

301, 302. Advanced Quantitative Analysis. (1-8, 1-3).

This course is a continuation of Chemical Engineering 202. The theory is devoted to lectures and recitations based on the work in the laboratory.

Text: Quantitative Analysis, Mahin.

The laboratory work comprises the analysis of alloys, fuels, ores, rocks, gas, water, and inorganic substances of industrial importance.

Prerequisite: Chemical Engineering 202.

307. Industrial Chemistry. (3-0).

This is an introductory course, covering the principal applications of chemical processes to commercial products, mostly organic in nature, such as gas manufacture, petroleum products, soaps, the starch and sugar industries, and the manufacture of paper, leather, and explosives. The manufacture of fertilizers, cement and ceramics is also considered.

Text: Industrial Chemistry, Rogers and Aubert.

Prerequisite: Chemistry 101, 102.

401, 402. Physical Chemistry. (3-4).

This course presents, wherever known, physical explanations of chemical and allied phenomena, together with a mathematical exposition of the laws involved. Some of the subjects thus developed are the atomic theory, the periodic law, solubility, fusion, vaporization, the phase rule, dissociation in solution, chemical equilibrium, and relative chemical activity. It leads up to a consideration of the best research of today. Most of the theoretical conclusions deduced in the class-room are confirmed in the laboratory. Lectures and recitations.

The laboratory work will consist of the calibration of apparatus, determination of molecular weights, heats, of reaction, rate of reaction, Law of Mass Action and other related topics. During the second term most of the experiments deal with electrical phenomena. A few experiments illustrating electro-chemical processes of commercial importance are performed.

Prerequisite: Chemistry 304, Mathematics 204.

403, 404. Technical Analysis. (2-8, 2-6).

The theory consists of lectures and conferences dealing with technical methods of analysis and with principles of chemical analysis and control, and with the application to problems other than those being carried out by the students in the laboratory. As the work of the students diverges, individual conferences will be arranged with each during which his particular problems will be discussed. Reference will be made to the library and current technical literature.

The early part of this course is essentially a continuation of Chemical Engineering 302, but the substances dealt with are chiefly organic and include asphalt, oils, soaps, paints, sugars, and foods. The latter part is devoted to a comparison of different methods of analysis, to detailed investigation of problems relating to chemical control, and to such work as seems suitable to the requirements of the individual student.

Prerequisite: Chemical Engineering 302.

406. *Microchemical Methods.* (0-2).

This course is designed to give the student some knowledge of the use of the microscope in qualitative and quantitative analysis. General methods are first explained and dealt with, followed by an examination of various substances to which this method of analysis is particularly adapted.

Open to Juniors and Seniors who have had a course in Quantitative Analysis.

407. *Industrial Chemistry.* (3-0).

Same as course 307.

408. *Metallurgy of Iron and Steel.* (2-0).

In this course the metallurgy of iron and the manufacture of steel are considered in detail, especial attention being given to the nature and location of valuable iron ore deposits, together with suitable fluxes; to the nature and availability of proper fuels, together with the furnaces used; to the constitution of the resulting pig iron and the manufacture of steel therefrom; and finally to the chemistry of the different kinds of steel and their adaptability in engineering practice. Lectures and recitations.

Text: The Metallurgy of Iron and Steel, Stoughton.

Prerequisite: Chemistry 101, 102.

EQUIPMENT.

Besides the equipment described under the department of Chemistry, this department is provided with a separate room for technical analysis and one for advanced industrial chemistry. The latter is not yet fully equipped. The former is provided with vacuum and compressed air systems, colorimeters, calorimeters, refractometers, Lovibond tintometer, combustion furnaces, gas burettes and other special apparatus used in technical analysis. The laboratory has the usual equipment for work in physical chemistry.

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR SPENCE, PROFESSOR MORRISON, PROFESSOR LOVE, ASSOCIATE PROFESSORS RICHEY, COGHLAN, MILLER.

Instruction in this department is based upon the use of good textbooks, supplemented by lectures or explanations in the class-room and by practice in the field and testing laboratories, and in the drafting room. Many problems are assigned to the student in order that the underlying principles involved in their solution may be more thoroughly impressed upon him. Effort is made to develop appreciation of the degree of precision required in different kinds of work, and of the conditions under which approximate methods are desirable or admissible. Throughout the instruction work in this department a thorough understanding of the basic principles involved in a few fundamental engineering subjects is preferred to a more superficial introduction to many different subjects.

The courses are as follows:

201. Plane Surveying. (3-4).

Chaining; construction, use, and adjustment of the compass, level, transit, and minor surveying instruments; land survey computations; stadia; topographic and city surveying; general surveying.

Text: Plane Surveying, Raymond.

Students are required to become familiar with the various instruments by adjusting them and using them in the field to work out various practical problems. They must take all necessary notes, make calculations and prepare maps and profiles of the work done.

Prerequisite: Mathematics 103.

202. Railroad Engineering. (2-4).

The theory and practice of simple and compound curves is taught in both class-room and field, and such problems are given as will illustrate the application of the theory to actual working conditions.

Text: Field Manual for Railroad Engineers, Nagle.

Problems in simple and compound curves are assigned, the notes calculated and the curves "run out" in the field.

Prerequisite: Civil Engineering 201.

204. Analytic Mechanics. (3-0).

A study of the fundamental principles of mechanics, with numerous problems showing their application in engineering. Both kinetic and statics are considered, but special emphasis is put upon the applications of the principles of static equilibrium.

Text: Analytic Mechanics, Miller and Lilly.

Prerequisite: Mathematics 203.

206. Plane Surveying. (2-3).

After the fundamental principles of surveying have been covered, special attention is paid to building and lot surveys, laying out plots, foundations, etc.

Text: Plane Surveying, Raymond.

The use and adjustment of instruments and the field and drafting room methods are given due attention.

Prerequisite: Mathematics 103.

301, 302. Graphics. (0-2).

Elements of graphic statics. Use of the force and equilibrium polygons. Determination of centers of gravity and moments of inertia of areas. Bending moment diagrams. Determination of dead and wind load stresses in simple trusses by means of stress diagrams.

Text: Roofs and Bridges, Part II, Merriman and Jacoby.

Prerequisite: Civil Engineering 204.

303. Railroad Engineering. (3-4).

A continuation of course 202 covering transition curves, frogs and switches, vertical curves, earthwork, overhaul, estimates, etc.

Text: Field Manual for Railroad Engineers, Nagle.

Theory is demonstrated in the field by the working out of assigned problems and actually doing the necessary field work. This practice, as well as that of 202, is preliminary to the more elaborate field work in course 400.

Prerequisite: Civil Engineering 202.

303a. Railroad Engineering. (3-2).

A modification of course 303.

Text: Field Manual for Railroad Engineers, Nagle.

304. Railroad Construction. (2-0).

Railroad surveys; materials; structures; equipment; costs; economics.

Text: Railroad Construction, Webb.

Prerequisite: Civil Engineering 303.

305. Mechanics of Materials. (4-2).

This course covers a treatment of the resistance of materials and the mechanics of pipes, riveted joints, beams, columns, shafts, etc. After the study of the elementary mechanics of these structures, attention is given to more advanced topics, such as combined stresses, compound beams and columns, resilience, impact, and fatigue of materials.

Text: Mechanics of Materials, Merriman.

Determination of the strength, ductility, modulus of elasticity, and other properties of engineering materials. Various tests of timber, steel, cast iron, cement, etc., are made by the student and reports submitted showing results. In these reports considerable attention is given to the presentation of results in clear and condensed form by means of curves and tables.

Prerequisite: Mathematics 204.

306. Roads and Pavements. (3-0).

This course is intended for students in general civil engineering, and covers a brief general study of country roads and city pavements. Highway location, design, construction and maintenance are studied; also road laws, finances, organization and supervision.

The text is supplemented by lectures, the use of bulletins, road machinery, models and samples of materials.

Text: Elements of Highway Engineering, Blanchard.

Prerequisite: Civil Engineering 201.

308. Roofs and Bridges. (3-0).

Determination of dead load and wind load stresses in roof trusses analytically by resolution of forces and by moments. Study and application of analytical methods for determining stresses in simple truss bridges caused by dead load, live load, wind load, impact, etc. Study of maximum and minimum stresses.

Text: Roofs and Bridges, Part I, Merriman and Jacoby.

Prerequisite: Mathematics 204, Civil Engineering 204.

310. Water Supply Engineering. (2-0).

A general study of the sources of water supply for domestic use; the quantity and quality of a supply; the necessity for, and methods of, purification; collection, storage, and distribution of water; the construction and equipment of a complete system.

Text: Public Water Supplies, Turneaure and Russell.

Prerequisite: Civil Engineering 311.

311, 312. Hydraulics. (2-0, 2-2).

The laws governing water at rest and in motion, as related to engineering problems. The flow of water in pressure mains, sewers, aqueducts, open channels, and rivers; measurement of the flow of water by nozzles, orifices, weirs, and meters; estimates for water supply and water power; theory and efficiency of motors, wheels, turbines, rams and pumps.

Text: Treatise on Hydraulics, Merriman.

Calibration of nozzles, orifices, water meters, weirs, and pressure gauges; efficiency tests on impulse motors, hydraulic rams, and centrifugal pumps of one, two, and three stages.

Prerequisite: Mathematics 204.

314. Strength of Materials. (2-2).

A study of the strength of the common materials of engineering construction, and of the mechanics of simple structures such as pipes, beams, and columns.

Text: Strength of Materials, Murdock.

The practice is similar to that of course 305.

316. Mechanics of Materials. (4-2).

Same as course 305.

317. Strength of Materials. (2-2).

Same as course 314.

318. Surveying, Stresses. (3-3).

An elementary course in surveying, with especial attention to the use of the transit and level; followed by a short course in the determination of stresses in simple types of framed structures, by analytic and graphic methods.

Texts: Surveying Manual, Pence and Ketchum; Graphic Statics, Malcolm.

319. Farm Surveying. (3-4).

Chain surveying; adjustments and use of instruments in leveling, compass surveying and transit surveying with special reference to the form.

Text: Practical Surveying, McCullough.

320. Contracts and Specifications. (2-0).

Same as course 410.

322. Rural Highways. (3-0).

This course covers the construction and maintenance of earth, sand-clay, burnt-clay, shell, gravel and broken stone roads.

Text: Roads and Pavements, Baker.

Prerequisite: Civil Engineering 201.

324. Stresses. (2-2).

Elements of graphic statics, use of force and equilibrium polygons, stress diagrams for the simpler forms of framed structures. Analytical determination of reactions and stresses for roof trusses. Maximum and minimum stresses.

Text: Graphic Statics, Malcolm.

Prerequisite: Civil Engineering 204.

400. Field Practice. Summer following Junior year; 4 weeks.

A summer practice course in which effort is made to approximate the actual working conditions of preliminary and location surveys.

The class will be required to put in the full working day, and to complete exercises assigned in railroad and topographic surveying; triangulation, river gauging; road and street location; mapping.

Additional problems of benefit to the student may be assigned.

Reference text: Field Manual for Railroad Engineers, and Manual for Resident Engineers, Molitor and Beard.

401. Railroad Drafting. (0-3).

Office methods of working up the notes of reconnoissance, preliminary and location surveys and maintenance surveys. This includes the completion of a map, a profile and estimate of the line located in course 400.

402. Sewage. (2-0).

Questions relating to the amount of sewage, kind of system, design, construction, maintenance, and methods of sewage treatment and disposal, receive special attention in this course.

Text: Sewerage, Folwell.

Prerequisite: Civil Engineering 311.

403. Roofs and Bridges. (2-8).

The determination of stresses in the more complicated structures and the design of simple trusses.

Text: Roofs and Bridges, Parts I and III, Merriman and Jacoby.

The determination of stresses by various graphic methods followed by the design of a Parker truss; after the design, the student is required to make detailed drawings.

Prerequisite: Civil Engineering 308.

403a. Roofs and Bridges. (2-2).

An abbreviation of course 403.

404. Bridge Design. (0-4).

A continuation of the practice in course 403.

Prerequisite: Civil Engineering 403.

405, 406. General Civil Engineering. (0-3).

Practice in the field, drafting room, and laboratory.

Prerequisite: Civil Engineering 304, 305, 312.

407. Masonry. (3-0).

The principles of masonry construction in general, except as applied to reinforced concrete, are covered in this course.

Text: Treatise on Masonry Construction, Baker.

Prerequisite: Civil Engineering 305.

408. Higher Structures. (3-4).

The determination of stress in swing, cantilever, and suspension bridges, and in arches.

Text: Roofs and Bridges, Part IV, Merriman and Jacoby.
Prerequisite: Civil Engineering 403.

409. Irrigation Engineering. (2-0).

The determination of the amount of water available, the losses, the detriments, the quantity of water required and the application of the principles of hydraulics; the design, location and construction of canal works; the design, location and construction of storage reservoirs. Existing irrigation systems and methods are reviewed.

Text: Principles of Irrigation Engineering, Newell and Murphy.
Prerequisite: Civil Engineering 311 and 312.

410. Contracts and Specifications. (2-0).

A brief study of the law of contracts as applied to engineering operations; the relation of the engineer to the owner and to the contractor; the necessity for, and preparation of, engineering specifications and the accompanying documents; general and specific clauses in specifications; illustrative examples.

Texts: Elements of Specification Writing, Kirby; Contracts in Engineering, Tucker.

411, 412. Hydraulics. (2-0, 2-2).

Same as course 311, 312.

413. Reinforced Concrete. (2-2).

The theories of stress distribution, and various systems of reinforcement employed in the construction of beams and columns are discussed, and illustrative examples studied. Determination of stresses and elementary design, based upon the assumptions commonly made, are taken up by means of practical problems solved by the student.

Text: Reinforced Concrete Construction, Vol. I, Hool.
(In Course IV the practice is included in Civil Engineering 405.)
Prerequisite: Civil Engineering 204, Civil Engineering 314 or equivalent.

421. Bituminous Materials and Surfaces. (5-0).

This course covers a study of the classification, manufacture, testing, inspection and application of dust preventives and road binders, including road oil, oil asphalts, native bitumens, tars and tar products. Bituminous surface treatments, pavements made by penetration and mixing methods, sheet asphalt, and asphalt block pavements are studied.

Texts: Text-book on Highway Engineering, Blanchard and Drowne; Dust Preventives and Road Binders, Hubbard.

422. Non-Bituminous Pavements. (*4-0*).

Cement concrete, brick, wood block and stone block pavements are studied in this course, also sidewalks, curbs and gutters and street cleaning.

Texts: Text-book on Highway Engineering, Blanchard and Drowne; Modern Methods of Street Cleaning, Soper.

Prerequisite: Civil Engineering 429.

423. Bridge Design. (*0-6*).

The design of highway bridges.

Text: To be selected.

Prerequisite: Civil Engineering 308.

424. Road and Street Systems. (*2-4*).

Preliminary investigations, local conditions, traffic drainage, foundations, available materials, comparison of different road and street surfaces, comparison of different methods of surveying and mapping, road and street design, cross sections, grades, widths of roads, streets, and sidewalks, road systems, street systems, and city planning.

Text: To be assigned.

Prerequisite: Civil Engineering 429.

425. Road Laboratory. (*0-2*).

Tests of broken stone for hardness, toughness, cementing value, and resistance to abrasion. Rattler tests of paving brick. Tests of gravel, sand and clay.

426. Highway Bridges and Culverts. (*1-4*).

This course includes lectures and problems in the design and construction of highway bridges and culverts. The types of bridges best suited to various traffic conditions are studied, and such questions as the size of waterway, width of road, etc., are taken up in detail.

Text: To be assigned.

Prerequisite: Civil Engineering 413, 423.

428. Sewerage and Filtration. (*3-4*).

A study of sewage disposal and purification.

Text: To be selected.

429. Highway Laws, Economics and Organization. (*2-0*).

This course takes up a study of the road laws of Texas and other States, benefits of good roads, methods of financing highway construction and maintenance, and organization of State and municipal highway departments.

Text: To be assigned.

Prerequisite: Civil Engineering 322.

431. Stresses. (2-3).

A continuation of course 324. Stresses in trusses are determined, both graphically and algebraically. Graphical methods are applied in the investigations of the three-hinged arch, simple and fixed beams, and other structures.
Text: Graphic Statics, Malcolm.
Prerequisite: Civil Engineering 324.

433. Plane Surveying. (2-2).

Same as course 206.
Text: Plane Surveying, Raymond.
Prerequisite: Mathematics 103.

438. Higher Structures. (2-3).

The determination of stresses in arches and domes.
Text: To be assigned.
The complete design of an arch rib.
Prerequisite: Civil Engineering 308.

FOR GRADUATES.

501. Least Squares. (2-0).

The theory of least squares, and its application to the adjustment and comparison of engineering data, with special emphasis upon the methods of the United States Coast and Geodetic Survey.
Text: Least Squares, Merriman.

502. Geodesy. (2-0).

A further application of the method of least squares to problems in precise surveying. Study of the public land surveys, location of parallels of latitude, township lines, etc.
Text: Precise Surveying and Geodesy, Merriman.

503. Development of Water Powers. (2-0).

Surveys and hydraulic problems in connection with water-power development; market conditions and economic considerations; estimates of cost of construction and operation; reports.
Text: To be selected.

504. Astronomy. (3-0).

A course in general astronomy with special emphasis to engineering applications.
Text: General Astronomy, Young.

505. Sanitary Science. (2-0).

A consideration of the foundations upon which the practice of public sanitation is based.
Text: To be assigned.

506. Reclamation Engineering. (1-0).

Assigned readings, dealing with the methods adopted and scope of work caused by the United States Reclamation Service.

507, 508. Higher Structures. (2-8).

Two-hinged arch; the elastic arch.
Text: To be assigned.

509, 510. General Civil Engineering. (2-4).

The subject offered is made to conform to the character of instruction best fitted for particular cases, the student being allowed to indicate his preference.

FOR STUDENTS IN SHORT COURSES.

24. Plane Surveying. (2-4).

An elementary course in plane surveying. The construction, use and adjustment of the compass, level, and transit; methods, computations, and platting.
Text: Plane Surveying, Raymond.
Methods of measurements, use of the level, "running out" of areas and the adjustment of the instruments.
Prerequisite: Mathematics 13.

51. Graphics. (1-3).

Elements of graphic statics, use of the force and equilibrium polygons; the graphical determination of stresses and simple trusses.
Text: Graphic Statics, Malcolm.

52. Plane Surveying. (3-4).

Same as course 201.
Text: Plane Surveying, Raymond.
Prerequisite: Mathematics 53.

EQUIPMENT.

The department occupies a portion of the Civil Engineering Building and has five recitation rooms, two drafting rooms, library room, offices, and a good roads exhibit room. In the basement, the department has an instrument room, a general testing room, a hydraulic and road materials testing laboratory, a cement laboratory, and store room.

For the field work, the equipment consists of a well assorted lot of transits and engineers' levels for general work, also for more precise work in city surveying and leveling and for simple triangulation. Also surveyors' compasses, terracing levels, plane tables, aneroid barometers, range poles, rods, chains, chain tapes, metallic tapes, surveyors' pins, axes, etc. For the drafting room and other office work there are drawing tables, reckoning machines, two universal drafting machines, planimeters, slide rules, calculating instruments, protractors for general and special uses, and a sufficient supply of T squares, etc.

In the general testing laboratory there is one machine of 100,000, one of 50,000 and one of 20,000 pounds capacity, a 50,000 inch-pounds torsion machine and a rattler for testing paving brick. With the exception of the 20,000-pound machine these are all power-driven.

The hydraulic laboratory contains weirs, pressure gauges, hook gauges, water meters, measuring tanks, impulse wheels, hydraulic ram, centrifugal pumps, pitot tubes, current meters, nozzles, and other apparatus for hydraulic measurements. The centrifugal pumps are connected to a pressure tank in order that they may be forced to pump against various heads. The road materials testing laboratory contains sieves for examining gravel and machines for testing the hardness, working qualities, cementing values, etc., of materials suitable for road building.

In the cement laboratory are moulds for shaping briquettes for tension tests, moulds for compression tests, cement testing machines, sieves for testing the fineness of cement and sand, Vicat and Gillmore's needles for testing time of setting, damp closet, balances, pans and other appliances used in testing the qualities of cements.

The road materials testing laboratory is completely equipped with the most modern machines for testing non-bituminous road materials. This equipment includes a diamond core drill, diamond saw, grinding lap, Dorry hardness machine, Page impact machine for toughness test, Deval abrasion machine, ball mill, cementing-value briquette-forming machine, cementing-value impact testing machine, brick rattler, stone and sand sieves, sieve agitator, balances, and other miscellaneous equipment.

A road exhibit room is also maintained for the benefit of students and visitors. In this room are shown models of road sections and surfaces made of various materials available in Texas. Samples of gravel, rock, asphalt, and road soils, together with photographs, charts and maps of road work in the State complete the exhibit.

The department library and reading room contains engineering books, periodicals, blue prints, photographs, etc., and is kept constantly open for the use of students during the session.

DEPARTMENT OF DAIRY HUSBANDRY.

PROFESSOR RIDGWAY, ASSISTANT PROFESSOR CLUTTER, MR. THOMAS.

The courses offered in this department are for the purpose of giving special training in the production, manufacture, and handling of dairy products.

These courses may be grouped as follows:

1. The Feeding, Breeding, and Management of Dairy Cattle.
2. The Production, Care, and Handling of Milk.
3. The Manufacture of Products from Milk.
4. The Management and Operation of Creameries.

Special emphasis is given to the laboratory or practice work in connection with these courses, as the necessity of practical training along these lines is fully appreciated. The College dairy herd and College creamery operated in connection with this department afford the student facilities for working out the practical problems involved in these courses.

The courses are as follows:

102. Elementary Dairying. (2-2).

A course dealing with the secretion and composition of milk, and its products; the use and application of the lactometer in the determination of total solids and adulterations; the various methods of cream raising.

Text: Milk and Its Products, Wing.

301. Technology of Milk. (2-0).

The food value of dairy products. The utilization of dairy by-products.

Text: Dairy Technology, Larsen and White.

Prerequisite: Dairy Husbandry 102.

302. Dairy Manufactures. (2-4).

A course dealing with the manufacture of the more common dairy products, such as butter, cheese, and ice cream.

Text: Principles and Practice of Buttermaking, McKay and Larsen.

Prerequisites: Dairy Husbandry 301, Agricultural Engineering 305, Biology 305.

401. Herd Book Study. (0-4).

The tracing and studying of the pedigrees of the leading strains and families of dairy cattle.

Prerequisites: Dairy Husbandry 102, Animal Husbandry 302.

402. Milk Production. (3-2).

This course covers the field of dairy husbandry in its relation to the producer. The breeding, feeding and management of dairy cattle will be given special consideration.

Text: Feeds and Feeding, Henry and Morrison.
Prerequisites: Animal Husbandry 401, Dairy Husbandry 401, Biology 401.

403. Factory Management. (2-2).

This course will deal with the organization, construction, and management of creameries and ice cream factories, with special reference to creamery refrigeration and creamery accounting.
Prerequisite: Dairy Husbandry 302.

404. Seminar. (2-0).

Devoted to a study along selected lines of research, with a review and study of the most recent Experiment Station work.
(Open only to students taking Dairy Husbandry 402.)

405. Milk Inspection. (1-2).

Sanitation and pasteurization of milk and the testing of milk and its products for preservatives and adulterations.
Prerequisites: Dairy Husbandry 102, Biology 306.

FOR STUDENTS IN SHORT COURSES.

22. Elementary Dairying. (2-2).

A modification of course 102, dealing specially (in a more practical way) with herd record keeping and herd testing.
Text: Milk and Its Products, Wing.

23. Farm Dairying. (2-2).

The feeding, breeding, and management of dairy cattle; the use and care of cream separators, and the manufacture of butter on the farm.
Text: Dairy Cattle and Milk Production, Eckles.

52. Elementary Dairying. (2-2).

Same as course 22.

53. Farm Dairying. (2-2).

Same as course 23.

DEPARTMENT OF DRAWING.

PROFESSOR A. MITCHELL, ASSISTANT PROFESSOR GEIST, MR. REDLICH, MR. LANGFORD.

Instruction in drawing and descriptive geometry is given with three objects in view: First, to train the student by developing his powers of observation and imagination; second, to provide a basis for further instruction in other departments; and, third, to prepare the student for professional work as a draftsman.

Throughout all the courses in drawing the importance of freehand lettering is emphasized and regular practice in plain lettering is required.

The department is equipped with the necessary tables, models and reference books.

The courses are as follows:

101. Mechanical Drawing. (0-3).

Care and use of drawing instruments, simple exercises in the use of drawing instruments, instrumental and free-hand lettering, geometrical constructions, constructions of plane curves, plane and axometric projections.

Text: Mechanical Drawing, Part I, Giesecke.

102. Mechanical Drawing. (0-3).

Problems in descriptive geometry involving points, lines, planes, tangency, intersections of planes and solids, intersections of solids, development of surfaces, shades and shadows, linear perspective. This course is parallel to and is an application of courses 103 and 104.

Text: Mechanical Drawing, Part II, Giesecke.

Prerequisite: Drawing 101, 103.

103, 104.. Descriptive Geometry. (2-0).

Class-room exercises, quizzes, and lectures on general and special problems relating to points, lines, planes and solids; problems in shades and shadows and in perspective. Special attention is paid to the representation of objects, by autographic projection, in the first and third angles.

Text: Descriptive Geometry, Giesecke.

105. Freehand Drawing. (0-1).

Drawing from geometrical solids, common objects, plaster casts, still life, to study form, proportion, light and shade. Because of the need of facility in this field, considerable importance is attached to free-hand drawing; the aim is to develop in the student the power of free, artistic expression.

106. Freehand Drawing. (0-1).

Drawing, with special attention given to measuring, dimensioning and describing machines, machine parts, engineering structures and details.

The course is varied to meet the practical needs of students in the different engineering departments.

Prerequisite: Drawing 105.

108. Freehand Drawing. (0-1).

Designing of figures and patterns for fabrics.

Prerequisite: Drawing 105.

109. Freehand Drawing (Elementary). (0-4).

Line charcoal drawings of "blocks" and casts of heads and simple architectural ornament.

110. Freehand Drawing (Elementary). (0-4).

Shaded charcoal drawings of blocks and casts of heads and simple architectural ornament.

Prerequisite: Drawing 109.

112. Shades and Shadows, Perspective. (0-3).

Architectural shades and shadows. Building perspective.

Texts: Shades and Shadows, McGoodwin; Perspective, Lubschez.

Prerequisite: Drawing 101, 103.

116. Mechanical Drawing. (0-2).

Proper care and correct use of drawing instruments, simple exercises in the use of drawing instruments, instrumental and freehand lettering, geometrical constructions, orthographic and isometric projections.

Text: Mechanical Drawing, Part I, Giesecke.

118. Freehand Drawing. (0-4).

Elementary principles of freehand drawing during first half of the term followed by more advanced drawing from botanical and entomological specimens.

201. Mechanical Drawing. (0-4).

Standard conventional section lining, drawing of standard bolts, nuts, rivets and threads; helixes, elementary parts of machines and engineering structures.

Text: Mechanical Drawing, Part III, Giesecke.

Prerequisite: Drawing 101.

202. Mechanical Drawing. (0-2).

A continuation of course 201, including patent office drawings, working drawings of machines, engineering structures and details. The student is required to carefully sketch and measure the model; then, from his dimensioned sketch, he makes on detail paper, and traces, his working drawings.

This course is varied to meet the practical needs of students in the different engineering departments.

Prerequisite: Drawing 201.

209. Freehand Drawing (Advanced). (0-4).

Line charcoal drawings of full-length antique and modern subjects; shaded charcoal drawings from casts of more complex architectural ornament.

Prerequisite: Drawing 110.

210. Freehand Drawing (Advanced). (0-4).

Shaded charcoal drawings of full-length antique and modern subjects.

Prerequisite: Drawing 209.

305. Topographical Drawing. (0-4).

Topographical lettering, conventional signs, contour lines, topographical maps, topographical sketching.

Text: Topography, Mitchell.

307. Topographical Drawing. (0-2).

Same as course 305.

Text: Topography, Mitchell.

309. Freehand Drawing (Charcoal Life). (0-4).

Line charcoal drawings of the undraped figure; water color renderings of architectural subjects.

Prerequisite: Drawing 210, Architecture 202.

NOTE.—Water color rendering may be required in the regular work of Architecture 301, 302, 303 or 304.

310. Freehand Drawing (Charcoal Life). (0-4).

Shaded charcoal drawings of the undraped figure; pen-and-ink and water-color sketches of the draped figure.

Prerequisite: Drawing 309.

315. Mechanical Drawing. (0-2).

Same as course 116.

Text: Mechanical Drawing, Part I, Giesecke.

316. Freehand Drawing. (0-4).

Elementary principles of freehand drawing during first part of the term followed by water color rendering of foliage and general entourage.

409. Freehand Drawing (Life Class). (0-4).

Black-and-white and color studies of the undraped figure (guache and oil); sketches of the draped figure in various media.
Prerequisite: Drawing 310.

410. Freehand Drawing (Life Class). (0-4).

Color studies of the undraped figure (oil, water-color, pastel); modeling in clay of original studies for architectural ornament.
Prerequisite: Drawing 409, Architecture 310.

FOR STUDENTS IN SHORT COURSES.

11, 12. Mechanical Drawing. (0-3).

Proper care and correct use of drawing instruments, simple exercises in the use of drawing instruments, lettering, geometrical constructions, standard conventional signs, standard bolts, nuts, rivets, and threads; helixes, sketching, measuring and dimensioning elementary parts of machines.

This course is varied to meet the practical needs of students in the different engineering departments.

Text: Mechanical Drawing, Parts I and III, Giesecke.

13. Freehand Drawing. (0-1).

This course is practically the same as the course described under Drawing 105.

14. Freehand Drawing. (0-1).

This course is practically the same as course 106.

15. Mechanical Drawing. (0-2).

Same as course 116.
Text: Mechanical Drawing, Part I, Giesecke.

16. Mechanical Drawing. (0-2).

Working drawings of simple farm structures.

17, 18. Freehand Drawing. (0-2).

Sketching from geometrical solids, common objects, casts and natural specimens of plant and animal life.

19, 20. Mechanical Drawing. Tracing, Blueprinting, and Lettering. (0-4).

Proper care and correct use of drawing instruments, simple exercises in the use of drawing instruments, geometrical constructions, autographic and isometric projections, analysis and formation of Roman, Gothic, Block and Stump letters, with constant instrumental and freehand practice.

The drawings of this course are made in pencil on detail paper and then traced on tracing cloth. From these tracings blueprints are made.

Texts: Mechanical Drawing, Part I, Giesecke; Lettering, Reinhardt.

51, 52. Mechanical Drawing. (0-4).

A continuation of Drawing 11 and 12, including detailed and assembled drawings of electrical and textile machinery, patent office drawings, tracing and blueprinting.

53. Mechanical Drawing. (0-2).

A modification of course 51.

(Full credits for two-year courses in drawing will not be allowed to apply on four-year Courses).

DEPARTMENT OF ECONOMICS.

PROFESSOR KIBLER.

The Department of Economics offers the following courses, applying, as indicated, to the courses in Agriculture and Engineering, respectively.

303. Fundamental Principles of Economics. (3-0).

The first term of the Junior year is given to a study of the principles of Economics as a foundation for the course in Rural Economics. The course of study considers the theory of economic activities concerning production, distribution and consumption; and the practical problems of credit, banking, foreign and domestic exchange, monetary systems, co-operation, tariff, transportation, trusts, corporations, and finance and taxation.

Text: Principles of Economics, Ely.

304. Rural Economics. (3-0).

The second term of the Junior year is given to a more special application of economic theory to practical rural problems. Among the subjects considered are the conservation of land and other natural resources; land tenures; labor problems; economic and efficient co-ordination of the factors of production; scientific management; co-operative systems; and a survey of rural life.

Text: Agricultural Economics, Taylor.

306. Business Law. (2-0).

This course is designed to give the student a knowledge of such fundamental legal principles as will enable him to have an intelligent conception of his rights and obligations. The subjects treated are as follows: contracts, agency, partnership, joint stock companies, corporations, and real and personal property.

Text: Elements of Business Law, Huffcut.

401. Fundamental Principles of Economics. (3-0).

This is an adaptation of course 303 to the needs of students in the course in Agriculture.

402. Rural Economics. (3-0).

This course gives a general survey of the materials covered in courses 304, 405.

403. Fundamental Principles of Economics. (3-0).

This is an adaptation of course 303 to the needs of students in the course in Engineering.

404. Business Organization and Management. (*3-0*).

This course considers the common forms of business organization; the partnership, the joint stock company, and the corporation; the adaptation of the form of organization to the several classes of business undertakings, with the privileges and obligations accompanying each; and the technique of modern management.

Text: Business Organization and Combination, Haney.

405. Co-operative Credit and Marketing. (*3-0*).

This is an advanced course covering the development of rural organizations in Europe and America. It is designed to place such information before the student as will inspire and equip him to perfect practical organizations in his own community for facilitating credit operations, securing best market prices for farm products, and purchasing to advantage farm equipment and household supplies. This course is given by lectures and assigned readings.

406. Rural Problems. (*3-0*).

This course is designed to place before the student a comprehensive plan for socializing rural life. It considers the rural problem in its larger aspects, and the place of various organizations (schools, churches, social clubs, co-operative associations, etc.) and facilities for transportation and communication in so far as they affect the moral, social, and industrial development of the community.

Text: Constructive Rural Sociology, Gillette.

407. Constitutional Law of the United States. (*4-0*).

This is an elementary course designed to acquaint the student with the fundamental principles of our Constitution. It explains the powers and duties of each of the three departments of our Federal government; the relation of the States to the central government with respect to commerce, taxation, foreign relations, police power, etc.; personal rights and privileges under the Constitution; and the jurisdiction of the Federal courts.

Text: To be assigned.

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR BOLTON, ASSOCIATE PROFESSORS CANNON, WOOTEN, ASSISTANT PROFESSORS KELLOGG, BEACH, MR. GROGINSKI.

Instruction in Electrical Engineering is given by recitation, lecture, experiment, lantern illustrations, laboratory exercises, and individual conference. In most courses some modern text-book is taken as a basis for study and the work broadened and explained by lectures and problems.

The laboratory practice is designed more firmly to impress the principles taught in the class-room, to familiarize the student with the practical operation of electrical apparatus, and to teach him to investigate for himself the characteristics of various types of machines. Reports are required on all experiments performed, and the student learns to express thoughts concisely.

The courses are as follows:

201. Electricity and Magnetism. (4-4).

Lectures, recitations and problems in electricity and magnetism.

This includes a laboratory investigation of the phenomena studied in the text-book.

Prerequisite: Mathematics 102, 103.

202. Electrical Measurements. (4-4).

Lectures and recitations on the theory, standardization and use of electrical measuring instruments, including galvanometers, bridges, voltmeters, ammeters, wattmeters, and recording instruments.

In connection with this course, a short time is devoted to the study of the National Electric Code and modern methods of wiring.

The practice is intended to clarify the ideas received by the student in the class-room. It includes the accurate measurements of various electrical quantities, such as resistance, inductance, capacity, and the effect of temperature, position, etc., on these quantities; a study of the various types of batteries to determine their adaptability to different uses; calibration and repair of instruments, such as ammeters, voltmeters, and wattmeters; tests of the magnetic properties of iron.

Prerequisite: Electrical Engineering 201, Mathematics 104.

301. Direct Currents. (4-4).

The course is devoted to the study of the theory and applications of direct current machinery.

The practice is intended to give practical demonstration of the theory. It includes the operation of dynamos and motors, the determination of characteristics and the measurements and calculation of losses, efficiencies and regulation.

Prerequisite: Electrical Engineering 202; or Physics 203, 204, Mathematics 201.

302. Alternating Currents. (5-4).

Lectures and recitations on the principles of alternating currents, including a study of the relations of voltage, current, resistance, inductance and capacity.

Text: Electrical Engineering, Christie.

An experimental study of the effect of resistance, reactance, and capacity on alternating current circuits; the determination of wave shapes; and tests of some of the simpler types of alternating current machines.

Prerequisite: Electrical Engineering 301, Mathematics 204.

304. Problems. (0-2).

A study in the computing room of problems based on all the engineering subjects which the student has taken up to this time. Both graphical and mathematical solutions are required in many cases.

Prerequisite: Electrical Engineering 301, 302, Mathematics 204.

305, 306. Electrical Machinery. (2-0, 2-3).

Lectures and recitations on the operation and characteristics of dynamos, motors, transformers and other electrical appliances of the types most commonly met with in general engineering practice. This course is intended to give only a general idea of the subject. The course is intensely practical, only the more fundamental principles being studied in detail.

Text: Principles and Practice of Electrical Engineering, Gray.

The practice is designed to give the general engineering student some degree of familiarity with the operation and the more important characteristics of both direct current and alternating current machines.

Prerequisite: Physics 204, Mathematics 204.

307, 308. Electrical Machinery. (3-0, 3-3).

This course includes all the instruction given in courses 305, 306, but is somewhat more detailed. In this course special emphasis is laid on the study of the industrial application of motors and the operating characteristics of electrical machines usually found in power plants.

Same as the practice for course 306.

Prerequisite: Physics 204, Mathematics 204.

310. Electric Lighting. (2-2).

Lectures and recitation on the principles of illumination, with special emphasis on the use of electric lamps.

This practice includes the design of systems of illumination for various purposes. The practice also includes the test of some modern illuminants and the test of the illumination in buildings already lighted.

Prerequisite: Physics 203, 204.

401, 402. Alternating Current Machinery. (*3-4*).

This course embraces a study of alternating currents and alternating current machinery, including methods of generation, transformation and use; a study of wave shapes and quantities affecting wave shapes; and the effect of balanced and unbalanced loads.

The subject is treated from both the graphical and the mathematical viewpoint, the text being supplemented by lectures and problems.

Text: Alternating Currents and Alternating Current Machinery, Jackson.

The practical operation and determination of the characteristics of various types of alternating current machines.

Prerequisite: Electrical Engineering 302, 308.

403. Electrical Machine Design. (*3-4*).

Lectures and recitations on the design of electrical machines.

Text: Electrical Machine Design, Gray.

Practice in the design of dynamos, motors and transformers. Working drawings of some of the machines are required, while for others the design of the electrical parts of the machine is considered sufficient.

Prerequisite: Electrical Engineering 301, 302; to be accompanied or preceded by Electrical Engineering 401.

404. Power Plant Design. (*1-2*).

This course is intended to give the student an idea of the relations of the various machines required in an electric generating station. In order that the student may become familiar with the most modern practice, the course will be based largely on references to standard texts and to technical magazines.

The student is required to design and make estimates of the cost of such parts of an electric plant as the time will permit.

Prerequisite: Electrical Engineering 401, 403, Mechanical Engineering 302.

406. Electric Power Transmission. (*2-0*).

Lectures and recitations on the transmission and distribution of power by electrical methods. Many subjects not treated in the textbooks are studied, and the student is encouraged to investigate all available sources for information.

The student is required to design and estimate costs of several transmission lines.

Prerequisite: Electrical Engineering 401.

408. General Problems. (*0-2*).

A course of problems based on all engineering work required of the student previous to graduation.

Prerequisite: All subjects required before the second term of the Senior year.

424. Electric Railways. (2-2).

A study of railway apparatus, costs of construction and operation of electric railway systems, and operation methods. Students are required to make an engineering report on a small railway project, estimating cost of construction and operation and probable returns on investment.

The practice in this course consists of the test of electric railway motors, controllers, and other appliances, and tests of electric cars.

Prerequisite: Electrical Engineering 301.

(The right is reserved to withdraw this course if it is elected by less than five students).

426. Illumination. (2-2).

A course dealing with the principles of illumination and the application of these principles to specific cases. Attention is given to the arrangement of electric lights for decorative purposes as well as for useful illumination.

The practice in this course includes the test of various types of illuminant, the design of lighting systems, and the test of the illuminations of buildings already lighted.

Prerequisite: Electrical Engineering 301, 305, or 307.

(The right is reserved to withdraw this course if it is elected by less than five students).

428. Telephony. (2-2).

Lectures and recitations on telephone systems; their design, installation and management. This course includes a discussion of the relative advantages of the different types of telephones, and the faults and peculiarities met in each system.

An experimental study of telephones, switchboards, telephone circuits, and transmission systems.

Prerequisite: Electrical Engineering 301, 302.

(The right is reserved to withdraw this course if it is elected by less than five students).

429. Applications. (2-0).

Lectures on the applications of electricity to use in the various industries. This includes a brief outline of the application telephony, illumination, electric railways, and industrial machine drive.

Must be accompanied by Electrical Engineering 401.

(The right is reserved to withdraw this course if it is elected by less than five students).

430. Plant Management. (2-2).

Lectures on the management of power plants. This includes discussion of records, reports, methods of increasing the load on the plant, factors affecting plant efficiency, etc.

The solution of problems affecting power plant efficiencies.

Prerequisite: Electrical Engineering 401.

(The right is reserved to withdraw this course if it is elected by less than five students).

432. Electric Lighting. (2-2).

Same as course 310.

FOR STUDENTS IN SHORT COURSES.

21. Electricity and Magnetism. (3-4).

A modification of course 201.

Laboratory verification of the laws studied in the theory. The course also includes the use of instruments for the measurement of voltage, current, resistance, etc.

22. Direct Currents. (3-4).

A modification of course 301.

26. Telephone Plants. (2-0).

A descriptive course giving a brief general survey of the essential features of telephone exchanges, in order that in the subsequent more detailed studies the student may have a better realization of the relations of the parts being studied to the entire plant.

51, 52. Applied Electricity. (4-4).

A course of instruction covering magnetism and electricity, magnetic circuits, direct and alternating currents, and direct and alternating current machines and their applications. The subject is treated from a practical standpoint.

Electrical measurements and the experimental study of the construction and operating characteristics of electrical machinery.

55. Alternating Currents. (3-0).

A study of alternating currents with particular emphasis laid on the practical application of the subject matter. As far as possible, the subject will be treated from the graphical viewpoint.

56. Meters. (2-0).

A course covering the principles of operation, material of construction and methods of repair, test and calibration of electrical meters. This includes switchboard meters and watt-hour meters of various types.

Practice in the repair, calibration and test of meters is included in course 62.

57. Wiring and Illumination. (3-0).

A study of the rules and methods for exterior and interior wiring, including calculations for material to be used and estimates of costs.

The course also includes lectures and recitation on lighting and illumination, with special emphasis on electric lighting. The practice for this course is included in course 61.

58. Electrical Machinery. (6-0).

A course covering the principles involved in the design and operation of electrical machinery. The course deals with transformers and both direct and alternating current motors and generators and the applications of each type of machine.

59, 60. Telephony. (4-0, 4-2).

Manual and automatic switchboards, supervising and testing equipment, battery supply, power plants, protection, office buildings, outside wire plant, private branch exchanges, inter-communicating systems, composite and phantom circuits, operating methods, traffic studies, fundamental plans, rate systems, measured service, fault location, inductive disturbances, transmission equivalents and transmission studies.

Studies of cross-talk and induction, determination of transmission equivalents, and effects of bridged and series apparatus on transmission.

61, 62. Electrical Laboratory. (0-8).

Instruction and practice in testing electrical machines, including generators, motors, transformers, meters, lamps, etc. The course will also include practice in laying out circuits and installing electric wires. This practice is intended to strengthen the theoretical courses and at the same time give the student a thoroughly practical knowledge of electrical appliances and methods.

Part of the practice is devoted to the construction and repair of electrical machines. It is intended to familiarize the student with the construction of electrical machines and to give him sufficient knowledge of materials and methods to enable him to make repairs to such machines.

This course will include practical experience in operating the electric machinery found in power plants.

63. Telephone Testing. (0-6).

Practice in wiring, testing, and repairing. Insulation measurements, location of grounds and crosses, capacity measurements, battery tests, use of "telefault," tests of protective apparatus, locating defects in equipment and wiring, adjusting instruments.

64. Technical Business Forms. (1-0).

The principles of contracts, specifications, and business forms for telephone and other electric systems.

The student is required to prepare specifications covering various appliances, and to make written reports so that he may learn to write a clear, concise technical report.

68. Telephone Plant Design. (0-4).

Fundamental plan and switchboard design for small exchange, with estimate of fixed charges and operating costs. Special design problems in connection with larger exchanges.

EQUIPMENT.

The electrical engineering laboratories comprise a storage battery room, two adjoining machinery laboratories, a measurements laboratory, a standardizing room, a photometric laboratory, a telephone laboratory, an instrument room, a workshop and storage rooms.

The electrical laboratories are supplied with 2300 volt, three-phase, 60-cycle power from the College power station. Alternating current at 110 and 220 volts is obtained through transformers. Direct current is supplied by two motor-generator sets located in the machinery laboratory. The smaller set consists of a 2300-volt, 50-horse power induction motor direct connected to a 35 kw., 125-vole, compound wound direct current generator. The larger set consists of a 2300-volt, 100-horse power synchronous motor direct connected to two 35 kw., 250-volt, Dobrowolsky, three-wire, direct current generators, so arranged that they may be operated independently or connected in series for obtaining 500 volts. A 3-panel switchboard controls the above equipment and the feeders to the 6-panel switchboard used for the distribution of power within the machinery laboratories and to the switchboards located in the other laboratories. Throughout all laboratories the distribution of power is controlled by a plug-and-socket system, thus securing absolute flexibility.

The storage battery room contains a 60-cell lead storage battery, and a 110-cell Edison storage battery, with a mercury arc rectifier for charging. The batteries are connected through suitable control to the main distributing board.

The equipment of the machinery laboratories is as follows: Two Westinghouse 323-A street car motors mounted on a single shaft with prony brake attachment and equipped with both a hand controller and a master controller operating an electro-pneumatic system; one 250-volt and one 500-volt direct current motor; one 5-horse power, 110-volt, direct current series motor with interpoles; one 1½-horse power shunt generator; three 6 kw. compound wound machines; three 4 kw. compound wound machines; one 5 kw. direct current machine with four slip rings; two 5 kw. compound wound direct current generators with interpoles; one 7½-horse power compound wound motor with interpoles; one 7½-horse power Reliance variable speed motor; one 10 kva three-phase generator with six slip rings; one 20 kva rotary converter with six rings; one 8 kva converter; one 10 kva three-phase generator driven by a set of two 10-horse power, three-phase induction motors, arranged for cascade operation; one motor generator set consisting of a direct current motor and a 3 kva alternator with six rings for single phase, two or three-phase; one 2-horse power Century single-phase motor; one 2-horse power Wagner single-phase motor; one 2-horse power, two-phase induction motor; two 5-horse power, three-phase induction motors; one 3-horse power, three-phase induction motor; one 10-horse power Stow variable speed motor driving a 7½ kva alternator with the armature wound in twelve sections with connections to a terminal board; one 10-horse power, three-phase induction motor with four different rotors, both squirrel cage and phase wound; one 10-horse power, three-phase variable speed induction motor; one motor generator set consisting of a 10-horse power induction motor direct connected to a 7½ kw., 125-volt compound wound direct current generator; a number of transformers of different capacities; a constant current transformer; and accessory apparatus, such as rheostats, lamp banks, variable inductances, prony brakes, torsion dynamometer, etc.

The instrument equipment is ample and comprises d-c and a-c ammeters and voltmeters, wattmeters, frequency meters, synchroscopes, power factor meters, tachometers, etc.

The electrical measurements laboratory has a full equipment of the apparatus needed for the study of the fundamentals of electrical measurements. The equipment includes the following: various types of wheatstone bridges; a Kelvin double bridge; a Cary-Foster bridge; magnetometers, dynamometers; portable, semi-portable and wall galvanometers; astatic galvanometers; universal tangent galvanometer; calorimeters; sechometer; influence machine; electro-static apparatus; spark coils; apparatus for testing magnetic qualities of iron and steel; standard resistances; standard cells; physical balances; universal shunts; resistance boxes; variable inductances and capacities; portable storage batteries, and various minor equipment.

The standardizing room is equipped with a Leeds and Northup potentiometer and its accessories; Weston standard laboratory voltmeter, and milli-voltmeter with shunts; a Kelvin balance; Westinghouse precision ammeter, voltmeter, and wattmeter; and standard resistances and standard cells. In this room there is also a three-vibrator oscillagraph with photographic attachment, and a motor generator set consisting of a direct current motor direct connected to a set of four alternators giving a fundamental wave and the third, fifth and seventh harmonics, so arranged that any desired phase relation may be obtained between each of the harmonics and the fundamental.

The photometric laboratory has two dark rooms for photometric work proper. The equipment includes a station photometer; an illumination photometer; a Sharp-Miller photometer; a Flicker photometer; an integrating photometer consisting of an Ulbricht sphere two meters in diameter, with accessories, especially adapted for arc light photometry; rotating apparatus; a number of incandescent lamp candle power standards; and a collection of various arc lamps, and a number of units representing various indirect and semi-indirect lighting systems. There is also a room for the demonstration and comparison of various light sources and systems.

The telephone laboratory is equipped with a switchboard for central energy operation, a switchboard for magneto operation, and a Strowger automatic switchboard with complete equipment for operation. There are also numerous telephones and a large collection of transmitters, receivers, induction coils, generators, bells, jacks, drops, keys, relays, retardation coils, condensers, repeating coils, lamps, etc., obtained from the Automatic Electric Co., Kellogg Co., Western Electric Co., and other manufacturers. The Bryan Telephone Company operates a complete switchboard, which is used to give local and long distance service from various stations on the campus. This exchange is available to the students in electrical engineering for test. In connection with this laboratory, the department maintains a complete wireless telegraph station of sufficient capacity to reach a number of commercial plants in the State. This equipment is available for study both from an engineering and an operating standpoint.

Through the generosity of the Otis Elevator Company, a complete motor-driven elevator winding-engine equipment of the most modern type, complete with all automatic switches, regulators, controllers, etc., has been donated and installed in the laboratory for test and demonstration purposes.

The department also has a number of frames of dynamos and motors and cores of transformers that are used by the students in learning to wind and repair these machines.

The equipment for the students in electrical engineering is augmented by the fact that the direct connected generators in the powerhouse, their exciters and measuring instruments, and the motors used to operate the Textile School, machine shop and other laboratories are available for tests as practical operating plants after the students have performed the required experiments on the machines located in the laboratory.

Students are urged to read the literature pertaining to their work, and for this purpose the department library is available. A reading table is maintained, on which are kept the current copies of a number of technical magazines. The technical books in the general library are also available to the students.

DEPARTMENT OF ENGLISH.

PROFESSOR FOUNTAIN, ASSOCIATE PROFESSOR THOMAS, ASSISTANT PROFESSORS COFER, BRACKETT, MR. GUNTER, MR. CLICK, MR. WILSON, MR. MULLIN, MR. BITTLE.

The aim of this department is to give students such training as will enable them to use their mother tongue readily and accurately. The instruction, therefore, is practical rather than theoretical. Frequent written exercises are required in all courses, and these exercises are not only carefully read by the instructor, but are also discussed in personal conferences with the students. In this way, each student has his attention called to his errors; and suggestions, especially adapted to his needs, are made.

The courses are as follows:

103, 104. Rhetoric and Composition. (3-0).

This course involves recitations, oral and written, readings from masterpieces of literature, composition writing, and personal conferences at hours to be arranged with the instructor.

201, 202. English Literature. (3-0).

This course affords an opportunity for the students to obtain a general knowledge of English literature, the different stages of development being illustrated by the critical reading of selections of prose and poetry from representative writers of each period. Short papers on assigned subjects are required.

Prerequisite: English 103, 104.

203, 204. English Composition. (1-0).

This course is intended to give practice in organizing and writing longer themes than are required of the Freshmen. In addition to weekly compositions, the work involves recitations and personal conferences.

Prerequisite: English 103, 104.

211, 212. English Literature. (3-0).

In this course a somewhat detailed study will be made of some of the masterpieces of English Literature from Shakespeare to Tennyson. Weekly written reports will be required.

301, 302. Argumentation. (1-0).

This course involves a study of the essentials of argumentation, and practice in drawing briefs. Personal conferences with the instructor are required.

311, 312. English Literature. (3-0).

Same as course 211, 212.

321, 322. English Literature. (2-0).

In this course English literature from the beginning of the Victorian era to the present time will be treated as a reflection of the predominant ideals in politics, economic theory, science, philosophy, and religion. Weekly themes in connection with the reading will be a feature of the course.

401, 402. Public Speaking. (1-0).

The aim of this course is to help the student to a simple, direct manner of speaking. The work consists of the oral interpretation of some of the best orations, writing and delivering original pieces, and debating. Personal conferences with the instructor are required.

421, 422. English Literature. (2-0).

Same as course 321, 322.

FOR STUDENTS IN SHORT COURSES.

11, 12. Grammar and Composition. (3-0).

This course includes a thorough review of the essentials of English grammar, composition writing, and personal conferences with instructors.

21, 22. Practical Composition. (3-0).

This course includes a review of the fundamental principles of composition. The written exercises are on practical subjects, especial attention being given to business correspondence. Personal conferences with the instructor are required.

51. Practical Composition. (3-0).

Same as course 21.

52. Practical Composition. (3-0).

Same as course 22.

53, 54. Rhetoric and Composition. (3-0).

Same as course 103, 104.

DEPARTMENT OF ENTOMOLOGY.

ACTING PROFESSOR BILSING, MR. BRUNDRETT.

The structure, classification, life histories, habits and economic importance of insects are the fundamental subjects on which the courses in this department are based. The courses are planned so as to give the student a knowledge of the anatomy and biology of insects and methods for their control. Proficient students may also elect such courses as will fit them for technical entomological work after graduation.

The department is equipped with models illustrating insect anatomy, dissecting, compound and binocular microscopes and a special entomological library. For the study of insecticides and spraying machinery, the department has a special insecticide building equipped with modern machinery and all the standard insecticides.

An apiary is also maintained, in which advanced students have an opportunity to study the habits of the honey bee and obtain a fundamental knowledge of apiculture.

The courses are as follows:

201. Systematic Entomology. (*2-2*).

In this course the student is taught the anatomy and physiology of insects as a basis for the development of practical control measures. The various orders of insects are studied, particular attention being given the forms that are decidedly injurious or beneficial. Considerable time is given to the biological aspect of the subject. The student also becomes familiar with entomological literature and with the methods by which insects are identified and classified.

Text: Entomology, Its Biological and Economic Aspects, Folsom.

In the laboratory, the student studies both external and internal anatomy of insects, aided by models and by actual dissection. Drawings are made of insect structures and of specimens typical of the various orders.

202. Economic Entomology. (*2-2*).

This course is the logical continuation of course 201, and is open only to students who have successfully completed that course. The student, having become familiar with insect anatomy and physiology, here takes up the applied aspects of the subject. Special attention is given to the life history of the insects that are injurious to staple crops, fruit and truck crops, live stock, etc., together with measures for their control by means of intelligent farm practice and the use of insecticides. In connection with the practice work, the student is required to make a collection of local insects, consisting of at least fifty specimens, all of which must be properly pinned, labeled and correctly named. The importance of parasites and diseases and their utilization is also taught.

Text: Economic Entomology, Smith.

In the practice, the student prepares various insecticides for use, learns how to handle spraying machinery, and, so far as opportunities permit, tests the effect of various control measures upon injurious insects. Methods of fumigation for the destruction of insects infesting nursery stock, buildings and stored products are put into practice. Field trips are made to study injurious insects and for observing the effects of cultural methods or climatic conditions upon the destructiveness of insects.

Prerequisite: Entomology 201.

301. Systematic Entomology. (2-2).

Same as course 201.

302. Economic Entomology. (2-2).

Same as course 202.

304. Apiculture. (2-2).

This course is so arranged as to give the student a practical working knowledge of beekeeping which will prepare him for conducting a small apiary in connection with other farm work or for entering commercial beekeeping as a vocation. The course includes a study of the biology and life history of the honey bee, methods of making hives and equipment, management of swarming, honey plants, harvesting and marketing of honey, wax production and refining, control of bee diseases and elementary queen-rearing. The department is equipped with an apiary of medium size, with facilities for work in out-apiaries, hives, tools, wax-presses, automatic extractors and all standard equipment used in modern beekeeping.

Lectures and recitations, with supplementary reading.

306. Animal Parasites. (2-2).

This course consists of a study of insects and other arthropods which are parasitic upon domestic animals or which are concerned in the transmission of diseases of live stock, and means for their eradication or control.

Lectures, supplemented with literature.

Prerequisite: Entomology 201.

311. Advanced Systematic Entomology. (2-2).

This course is intended for students fitting themselves for Experiment Station or extension work of an entomological nature. The course embraces the collection and classification of insects in all orders, a study of insect taxonomy and the use of literature in identifying insects.

Prerequisite: Entomology 201, 202.

312. Advanced Systematic Entomology. (2-2).

This course is a continuation of entomology 311. The student having become familiar with the various orders is allowed to continue to study of general classification or to specialize in the classification of some particular group of insects.

Prerequisite: Entomology 201, 202.

401, 402. Advanced Systematic Entomology. (2-2).

Same as courses 311, 312.

403. Advanced Economic Entomology. (1-4).

This course is especially arranged for students intending to follow entomological work after their graduation from college. Particular attention is given to economic problems in entomology, methods of entomological research and field methods of insects investigation and control. The course also embraces insectary methods of breeding insects, studies of entomogenous fungi and of insects parisitism.

Lectures, supplemented with literature.

Prerequisite: Entomology 201, 202.

404. Advanced Economic Entomology. (2-2).

This course is a continuation of course 403.

Prerequisite: Entomology 201, 202.

405. Fruit Insects. (2-4).

This course is intended for students who are specializing in horticulture and who wish more definite information concerning the insect pests of fruit and truck crops. In this course a detailed study is made of the life history, habits and control of the pests of these crops. Special attention is given to control methods adapted to Texas conditions and to the value of parasites and orchard management in the control of insect pests.

Prerequisite: Entomology 201, 202.

406. Advanced Economic Entomology. (0-2).

Supplementary to the practice of course 404; for Science students.

414. Apiculture. (2-2).

Same as course 304.

FOR STUDENTS IN SHORT COURSES.

24. Elementary Economic Entomology. (2-2).

A general outline of the classification of insects is here offered, together with a sufficient study of anatomy and biology for the understanding of control measures. Particular attention is given to injurious insects of field, garden, and orchard, together with the methods and insecticides by which they may be controlled.

Text: Elementary Entomology, Sanderson and Jackson.

The practice consists of sufficient dissection and study in the laboratory to familiarize the student with the different orders of insects. This is supplemented by field studies of injurious forms, together with the preparation of various insecticides and their use.

51. Systematic Entomology. (2-2).

Same as course 201.

52. Economic Entomology. (2-2).

Same as course 202.

54. Elementary Economic Entomology. (2-2).

Same as course 24.

DEPARTMENT OF FORESTRY.

PROFESSOR FOSTER, MR. KRAUSZ.

The courses offered by the forestry department are not intended to equip students for the profession of forestry. Experiences in all parts of the United States have shown that a training in professional forestry cannot be given in less than five years with any assurance of a reasonably successful career. It is, therefore, urged that any student desirous of making forestry his life work shall first obtain a bachelor's degree, taking as much work as possible in biology, chemistry, English, mathematics, and agriculture, including the courses offered in forestry. After the completion of such a course the student who wishes to follow forestry should expect to conclude his work with one or two years at some professional school of forestry which trains men for this profession.

A wide interest in forestry and tree culture has developed within recent years, and with it a demand for instruction in the underlying principles of forestry in the various educational institutions of the country, particularly the State agricultural colleges. Agricultural students who intend to return to the farm will find the courses offered helpful in the management of forest areas connected with their farms, and in the general care of trees and parks. It is hoped that the prospective teachers and those who specialize along horticultural lines, as well as students in general agriculture, will elect as many forestry courses as possible. It is desirable that these courses be taken consecutively, although as far as possible efforts will be made to adapt each course to the individual class which takes it. From time to time as the teaching force is increased, additions and changes will be made which will add to the value of the courses now offered.

The courses are as follows:

301. Principles of Forestry. (3-0).

This course is intended to give the student a general knowledge of forestry, tracing its history from the beginning in European practice to the United States and following its development in this country. In addition, the course consists of a general survey of the fundamental principles underlying forestry, including the relation of forests to soil, moisture, light, and climatic conditions; influences of forests upon stream flow; the important systems of treating woodlands practiced in Europe and in the United States; the habits of important economic timber trees and the character and uses of the more important woods; preparation of forest maps and working plans; methods of estimating standing timber and measuring its growth by the use of various forest instruments; artificial regeneration of forests by seeding and planting, and the best trees for ornamental and shelter belt planting; effects of forest fires and the study of other important enemies of the forest; a brief treatise on the timber regions of the United States; the amount of standing timber and the consumption of timber; the practice of forestry by the government, particularly on its national forests, and the present status of forestry in the States and among private owners of timber land.

302. Silviculture. (2-2).

This course consists of two parts, a study of trees under natural conditions, and the establishment of trees and forests by planting. The first part consists of a study of the life history of trees; the relation of different species to light, moisture, soil, temperature, and the effect of their association in the forest; origin and determination of forest types; the relation of forests to stream flow; description of forests; preparation of forest maps; improvement of young forests; and the proper cutting and use of mature forests so as to secure natural reproduction; silvicultural systems of cutting as practiced in the forests of Europe and the United States.

The second part considers the forest as an artificial establishment, and includes the collection, storage, testing, and germination of tree seeds; relative value of various species of trees for planting purposes; nursery practice; direct seeding; relative use of nursery and forest grown stock in planting; care of young plantations; costs of planting; planting for ornamental purposes; care of shade trees and parks; value of wind-breaks and shelter belts.

This course is supplemented by actual nursery and planting work.

401. Dendrology. (3-0).

The course in dendrology consists of a comprehensive study of the forest tree species of the United States and the more important introduced trees. This includes the botanical characteristics, distribution, classification and relative importance of the various species of trees. Both the summer and winter characteristics are examined and particular reference is made to those prominent and constant features which lead to ready identification. In this course the native and introduced trees of Texas and the commercial timber trees of the United States are given chief attention.

During the course each student is required to make a twig collection of not less than fifty different species of trees.

402. Wood Technology and Utilization. (2-2).

This course consists fundamentally of the study of the structure of the more important economic woods used in Texas and elsewhere in the United States. The student is taught first to become familiar with such characteristics as odor, taste, color, grain, and hardness in the different woods, and then to identify specimens definitely by studying their structure with the hand lens and the microscope. In addition, a study is made of the uses of the various woods and of the wood-using industries of Texas and other States. The student learns to become familiar with the sources of raw material which supply these industries.

Attention is given to methods of preserving timber from decay and wood testing as carried on in the United States.

Practice in this course consists chiefly in studying the various woods in the laboratory.

FOR STUDENTS IN SHORT COURSES.

12. Elementary Forestry. (*3-0*).

This course is intended to give the student a general understanding of the principles of forestry. It will be the aim, however, to emphasize the management and care of farm wood lots and wind-breaks and the propagation of trees for ornamental and forestry purposes. The course will consider briefly the development of forestry in the United States and abroad; the practice of forestry by the government on its national forests, by the States, and by private owners; the methods of improving and maintaining wood lots and protecting them from fire and other injuries; the methods of growing trees and the kind of trees to plant in the plains region of the State, including seed collection and nursery work; rules and methods of measuring the contents of trees and wood products, and the study of fence posts and the means of preserving them from decay. The course will include a brief study of the native trees of Texas and the important introduced trees desirable for planting purposes.

52. Elementary Forestry. (*3-0*).

Same as course 12.

DEPARTMENT OF HISTORY.

PROFESSOR CHASTAIN, MR. ABSHIRE.

It is the aim of this department to have the student learn that history deals with the life of a nation in the process of growth; that the content of history is not a dead thing, but that it lives and moves; that it is dynamical and not statical; that it obeys the law of continuity; that there are no breaks or leaps; that development may hasten or may slacken, but that it is always continuous, and that the operation of the law of continuity makes history a unit. The study of life of any people reveals certain characteristics common to the history of all civilized nations; there will be found five well marked phases—a political, a religious, an educational, an industrial, and a social phase. The student should understand that history is one continuous current moving on toward one purpose—not one destiny for government, another for church, and so on, but that all these make one life with one destiny. The student is encouraged to trace all these lines of growth, taking each great event and each series of events, discovering to what extent all institutions are affected.

Students are urged to make constant use of the College library, which contains a great many histories and biographies from which they may be able to pursue a systematic investigation for themselves.

The courses are as follows:

101, 102. Modern Europe. (3-0).

It is the purpose of this course to treat of those events ushering in and including the Modern Age; the rise of France under Louis XIV; the ascendancy of Prussia and Russia; the development of England's colonial supremacy; the French Revolution and the Napoleonic era. The evolution of constitutional government in the states of Europe; the unification of Germany and Italy; the Eastern question; and problems of modern governments.

Text: The Development of Modern Europe, Volumes I and II, Robinson and Beard.

301. Industrial History of England. (3-0).

This course deals with the industrial development of England from earliest time to the present. The following subjects, among others, are considered: the manorial system; the disappearance of serfdom; the process and effect of enclosures; the guild system; the rise of the commercial classes; the industrial and agricultural revolution of the eighteenth century; the factory system and factory legislation; the free trade movement; the beginning and growth of the modern labor movement.

Text: Industrial and Social History of England, Cheyney.

302. Industrial History of the United States. (3-0).

In general, the growth of the colonies from isolated agricultural communities to a complex industrial and commercial society is followed. In consideration of this process, attention is given to the following subjects: the business aspect of the early colonies; the colonial labor, commerce and manufactures; the economic aspect of the Revolution; the western movement and public lands; the expansion of manufactures and commerce after the War of 1812; the protectionist movement; the development of internal improvement; the economic causes of the Civil War; the commerce and expansion since the war.

Text: Industrial History of the United States, Bogart.

401. Industrial History of England. (3-0).

Same as course 301.

402. Industrial History of the United States. (3-0).

Same as course 302.

403, 404. American History and Government. (2-0).

The purpose of this course is to fuse the study of social and industrial development with a study of political institutions—the keynote being found in the efforts of a hard people to appropriate and develop the greatest resources of the continent and there to realize their ideals of liberty and government. Therefore, the industrial development of the country finds an important place in the course. Attention is given to the following subjects: The European background of American History; Spain, France, and England in America; colonial self-government; the Revolution—its causes and importance; the Confederation and Constitution; the Federalist system; the Jeffersonian system; Jacksonian Democracy; westward extension; slavery and abolition; Civil War—its causes and importance; reconstruction, political, and economic; national problems; America as a world power; and the ideals of American government.

Text: American History, Bassett.

DEPARTMENT OF HORTICULTURE.

PROFESSOR KYLE, ASSOCIATE PROFESSORS POTTS, HENSEL, MCGINNIS,
ASSISTANT PROFESSOR COWART.

The aim of this department is twofold: First, to develop scientific horticulturists; second, to turn out practical fruit and truck growers. This statement does not mean there are two distinct courses, but that when a student finishes the course he is prepared to engage in either the scientific or the practical side of horticulture. The course of study covers somewhat fully the different lines of horticulture and embraces plant propagation, vegetable gardening, orchard culture, nut culture, plant breeding, viticulture, spraying, citrus fruits, experimental horticulture, besides special work in landscape art and floriculture. In order to develop the practical side of the student, he is given from two to four hours a week in outdoor work, which comprises practice in budding, grafting, pruning, thinning fruit, spraying, setting out orchards, and planting vegetables. He is taught how to mix and apply fertilizers, and he is also shown the best methods of cultivating the different horticultural crops. The department now has growing on the College grounds standard varieties of peaches, paper-shell pecans, grapes, persimmons, pears, plums and figs, and small fruits consisting of blackberries and dewberries.

Besides the theoretical and practical work given at the College, the student is sent out during the summer to work in the orchards and truck farms of the largest growers, not only in this but several of the other leading fruit States. Excursions are arranged during the school year for visiting the largest and most successful fruit and truck farms in the State. This not only gives the young man a good knowledge of the horticultural work done in his own State, but also enables him to become personally acquainted with some of the best practical horticulturists of the United States, and at the same time familiarize himself with the methods used by such men.

The courses are as follows:

201. Plant Propagation and Orcharding. (3-2).

Lectures and recitations are given on the fundamental principles and methods of plant propagation and orcharding, including vegetables and fruits, and ornamentals.

Lectures and recitations.

Practice in propagation of plants from seed, budding, grafting, and in planning, planting, pruning, spraying and general care of the orchard.

202. Vegetable Gardening. (2-2).

Detailed instruction in planting, equipping and operating vegetable gardens for home and commercial purposes, and practical demonstrations and experience in the field; a thorough discussion of the methods used in Texas in growing the most important vegetable crops.

Lectures and recitations.

The practice is devoted to the building of hotbeds, cold frames, the mixing and application of fertilizers, planting, cultivating, spraying and harvesting of vegetable crops.

301. Spraying. (1-4).

The history and development of spraying in the United States and foreign countries is studied, special attention being given to the evolution of spraying machinery and formulas.

Lectures.

Text: Spraying of Plants, Lodeman.

Practical work in making various spraying mixtures for insects and diseases and applying the preparation to orchard and vegetable crops.

302. Plant Breeding. (2-2).

This course is planned to give the student a better understanding of the benefits to be derived from the intelligent breeding of plants. The relation of horticultural varieties and hybrids to each other and to their parents is discussed, together with the principles of pollination, crossing and hybridization.

Text: Plant Breeding, Bailey and Gilbert.

Most of the practice work is devoted to the cross pollination of our common plants, and to the study of natural variations arising among garden plants.

304. Nut Culture. (2-2).

This course includes a study of those nuts which are of the most economic importance. Special attention is given to the native nuts. Top-working the native pecan and hickory to improved varieties of pecans is fully discussed.

Lectures and recitations.

Practice is given in budding and grafting pecans in the nursery row; also in top-working native pecans to improved varieties by means of the ring, patch, chip, crown budding and grafting.

Prerequisite: Horticulture 201.

307. Introduction to Landscape Art. (2-0).

This is a cultural course given for the purpose of developing in the student a true appreciation of Landscape Art.

Illustrated lectures and recitations.

Text: Rural Improvement, Waugh.

308. History of Landscape Design. (2-0).

A comprehensive study of the development of landscape design.

Illustrated lectures and recitations.

401. Pomology. (3-2).

A comprehensive study is made of the evolution of our native fruits. Special attention is given to the grape, plum, mulberry, apple, cherry, blackberry, dewberry, strawberry, persimmon, etc.

Lectures and recitations.

Text: To be assigned.

Practice in systematic pomology is given with such fruits as can be obtained during the season.

402. Experimental Horticulture. (2-4).

Practical methods of planning and carrying out experiments, such as are in vogue by the most up-to-date experiment stations.

The student will be required to plan his experiment, prepare the land, mix and apply the fertilizer, sow the seed, cultivate, spray and harvest the crop, and make a report on the results obtained.

404. Subtropical Fruits. (2-2).

A study of all the species of subtropical fruits grown in this country. Special attention is given to the growing of the hardier varieties that are adapted to the Texas coast region.

Lectures.

Text: Citrus Fruits, Coit.

Practice in the study of representative citrus fruits and in the propagation of the different species of subtropical trees; special demonstration work in protecting citrus trees from frost.

405. Bush and Vine Fruits. (2-2).

This course consists of a study of the propagation, culture, harvesting and marketing of small fruits, such as the blackberry, dewberry, strawberry, currant, grape, etc. Attention is given to the varieties best adapted to Texas conditions.

Lectures and recitations.

Practice is given in planning, planting, pruning, spraying and the general care of berry patches.

407. Introduction to Landscape Art. (2-0).

Same as course 307.

408. Floriculture. (2-2).

A study of greenhouse and garden plants, including their propagation and culture.

Text: Principles of Floriculture, White.

409. Ornamentals. (2-2).

This course embraces a thorough study of the ornamentals adapted to Southern conditions.

Lectures and recitations.

Practice is given in the propagation and classification of ornamentals.

415. Landscape Design. (*3-2*).

This course gives the principles underlying Landscape Art. It also deals with the solving and drafting of problems dealing with landscape work.

Illustrated lectures and recitations.

Text: Design in Landscape Gardening, Root and Kelly.

Prerequisite: Horticulture 307.

416. Landscape Design. (*3-2*).

A continuation of course 415.

Text: To be assigned.

FOR STUDENTS IN SHORT COURSES.

21. Plant Culture and Propagation. (*3-2*).

A modification of course 201. The first part is devoted to plant culture, and is followed by a thorough discussion of the propagation of plants, including all the fruits, ornamentals, and vegetables.

Lectures and recitations.

Practice work in the propagation of seedlings and the different forms of budding and grafting, layering, etc.

22. Vegetable Gardening. (*3-2*).

A modification of course 202.

51. Plant Propagation and Orcharding. (*3-2*).

Same as course 201.

52. Vegetable Gardening. (*3-2*).

Same as course 22.

53. Tree and Vine Fruits. (*3-2*).

A comprehensive study of the various kinds of fruit orchards and vineyards, embracing the problems of location and soils, protection from insects and diseases, pruning, cultivating, harvesting and marketing.

Lectures.

Text: Principles of Fruit Growing, Bailey.

Practical exercises in laying out orchards, spraying, etc.

Prerequisite: Horticulture 21.

55. Spraying. (*1-4*).

Same as course 301.

58. Nut Culture. (2-2).

This course includes a study of those nuts which are of the most economic importance. Special attention is given to the native nuts. Top-working the native pecan and hickory to improved varieties of pecans is fully discussed.

Practice is given in budding and grafting pecans in the nursery row; also in top-working native pecans to improved varieties by means of the ring, patch, chip, crown budding and grafting.

Prerequisite: Horticulture 21 or 51.

DEPARTMENT OF MATHEMATICS.

PROFESSOR PURYEAR, ASSOCIATE PROFESSOR R. F. SMITH, ASSISTANT
PROFESSORS J. W. MITCHELL, MICHIE, GARNER, JONES,
MR. BOND, MR. BECKWITH.

Instruction in this department is given by the use of approved textbooks, supplemented by oral explanations and informal lectures. The student's knowledge of the subject is tested daily at the blackboard, and in each course written solutions of selected problems and review exercises involving the work of preceding courses are frequently assigned.

The courses are as follows:

101, 102. Algebra. (3-0).

A rapid review of elementary topics, followed by the study of quadratic equations, the binomial theorem, variation, the progressions; complex numbers, theory of equations, logarithms, limits, undetermined coefficients.

Text: College Algebra, Rietz and Crathorne.

103. Plane Trigonometry. (3-0).

Goniometry, review of logarithms, solution of right triangles, problems of heights and distances, properties of triangles, solution of oblique triangles, geometrical applications, mensuration.

Text: Plane and Spherical Trigonometry, Taylor and Puryear.

104. Analytics. (3-0).

The straight line, transformation of co-ordinates, circle, ellipse, parabola, hyperbola.

Text: Analytic Geometry, Riggs.

Prerequisite: Mathematics 101, 103.

201. Analytics. (1-0).

The general equation of the second degree, higher plane curves, introduction to analytic geometry of three dimensions.

Text: Analytic Geometry, Riggs.

Prerequisite: Mathematics 104.

203, 204. Differential and Integral Calculus. (4-0, 3-0).

Differentiation, infinite series, expansion of functions, indeterminate forms, functions of several variables, tangent and normal, curvature, maxima and minima; integration, lengths, areas, volumes, moments of inertia; centers of gravity, examples of differential equations.

Prerequisite: Mathematics 104.

205. Differential and Integral Calculus. (5-0).

A modification of course 203, 204.
Prerequisite: Mathematics 104.

FOR STUDENTS IN SHORT COURSES.

11, 12. Plane Geometry. (3-0).

Definitions, rectilinear figures, the circle, similar polygons, areas of polygons, regular polygons, measurement of the circle.
Text: Plane Geometry, Wentworth-Smith.

13, 14. Shop Mathematics. (4-0, 3-0).

An elementary course in algebra, geometry and trigonometry, with special reference to practical applications to shop problems.
Text: Advanced Shop Mathematics, Norris and Craigo.

15. Plane Geometry. (6-0).

Same as course 11, 12.

16. Algebra. (3-0).

Graphs, linear systems, square root and radicals, quadratics, exponents.
Text: First Course in Algebra, Hawkes, Luby and Touton.

17. Solid Geometry. (3-0).

Definitions, lines and planes in space, dihedral angles, polyhedral angles, polyhedrons, the cylinder, cone and sphere.
Text: Solid Geometry, Wentworth-Smith.
(Required as an extra study of Freshman in the School of Engineering who do not present solid geometry for admission).

18. Solid Geometry. (3-0).

Same as course 17.

53. Plane Trigonometry. (3-0).

Same as course 103.

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR FERMIER, PROFESSOR H. E. SMITH, ASSISTANT PROFESSOR WIPPERMANN, MR. HERRINGTON, MR. CHAPELLE, MR. C. E. HANSON, MR. G. W. HANSON, MR. MARTINSON, MR. WILSON.

The work of this department is carried on in both class-room and shop or laboratory, the two lines of work being designed to emphasize and reinforce each other.

In the shop practice the student works with woods and various kinds of metals, getting experience in the handling of tools and materials and acquiring a knowledge of the properties of materials by personal contact. Although he acquires a certain skill in the handling of tools, etc., yet the main result sought is not the training as a mechanic. Instead, it is expected that he will chiefly get the clear and definite ideas of the behavior of materials under the various technological processes which can be acquired only by personal contact and experience.

The class-room work is taught by text-books, lectures, written tests, and many numerical examples. The student is expected to understand the underlying principles and to show their application in the solution and discussion of engineering problems of various sorts.

In the design rooms the instruction is given by lecture and reference books, together with practice, using the methods of drafting rooms of manufacturing concerns.

In the latter part of his course the student is expected to examine, operate, test and report on the various pieces of apparatus and equipment in the laboratory, shops and powerhouse.

The courses are as follows:

101, 102. Elementary Mechanics. (*2-0*).

The work of this course consists of lectures, quizzes, and problems involving those principles of mechanics which are more commonly used in all branches of engineering.

Each student is required to keep a note-book for the lecture notes and problems.

The second term's work must be preceded by Mathematics 103.

103. Carpentry. (*0-4*).

Shop practice in the use of the common bench tools and power machinery for working in wood, as applied to joinery, elements of construction, and cabinet making.

104. Forging. (*0-4*).

Shop practice in the use of blacksmith and general forge tools in the working of iron and steel. Also tempering, annealing, welding, case-hardening, etc.

NOTE.—Courses 103 and 104 together constitute a year's work, 4 hours a week.

The Freshman students in Courses III, IV, V, VI and VIII will be divided into two groups at the beginning of the first term; one group will begin with course 103 and the other with course 104. At the beginning of the second term the groups will each change to the other work.

201. Pattern Making and Foundry Work. (0-4).

Shop practice in pattern making, molding, and casting in iron, brass, etc.

Prerequisite: Mechanical Engineering 103.

202. Pattern Making and Foundry Work. (0-4).

A continuation of course 201.

203. Principles of Manufacturing. (1-0).

This course consists of lectures and quizzes (1) on hand and power tools and machines for working wood and metals, their construction, care and operation; (2) on the technological properties of materials of shop manufacture; and (3) on processes of manufacture.

No text-book is required, but a note-book is required for the lectures.

205. Elementary Steam Engineering. (3-0).

This course aims to give the student such a knowledge of steam power plant equipment as will enable him to understand the operation of the same, and serve as a foundation for subsequent study and calculation along these lines. Valve gears, valve diagrams, and indicator practice are also included.

Text: Elementary Steam Engineering, Spangler.

Prerequisite: Mathematics 103, Mechanical Engineering 101, 102.

206. Elementary Steam Engineering. (3-0).

Same as course 205.

208. Kinematics. (3-0).

Without taking account of the strength of the structure, this course takes up the study of motion, velocity ratios, comparative forces, etc., in machines and their elemental parts.

Text: Mechanism, Keown.

Prerequisite: Mathematics 104 and Mechanical Engineering 205.

210. Kinematic Drawing. (0-3).

Practice in the construction of kinematic diagrams.

Must be accompanied by Mechanical Engineering 208.

Prerequisite: Drawing 201.

212. Engineering Mechanics. (2-0).

A study of pure mechanics as the foundation principles involved in the analytical solution of problems concerning the statics and dynamics of a material point and of a rigid body; with numerous numerical examples from practical engineering questions.

Prerequisite: Mathematics 203, Mechanical Engineering 205.

Must be preceded or accompanied by Mathematics 204.

301. Steam Engines and Boilers. (2-0).

A study of fuels; combustion; the generation of steam; the construction, operation, care, design and testing of boilers of various types, together with the design of chimneys and other means of producing draft.

Text: Steam Boilers, Parsons.

Prerequisite: Mathematics 204, Chemistry 101, 102, Physics 201, 202, Mechanical Engineering 205, 208.

302. Steam Engines and Boilers. (3-0).

A study of the elementary thermodynamics of heat engines; also the mechanics, construction, design, operation and testing of the steam engine. Valve gears, indicators, governors, etc., are also studied.

Text: Steam Engines, Creighton.

Prerequisite: Mechanical Engineering 301.

303, 304. Machine Design. (0-5).

This course consists of practice in the design of machine elements, and their proper representation by finished shop drawings.

Text: No text will be required, but each student is urged to secure a Kent's or Suplee's hand-book.

Prerequisite: Mathematics 204, Mechanical Engineering 212; must also be preceded or accompanied by Civil Engineering 305 and Mechanical Engineering 313.

305. Elementary Steam Engineering. (3-0).

Same as course 205.

309. Machine Shop. (0-6).

Practice in bench and machine tool work in metals. This includes chipping, scraping, filing, babbiting, pipe fitting, drilling, turning, boring, grinding, milling machine work, etc.

Prerequisite: Mechanical Engineering 103, 104, 201.

310. Machine Shop. (0-5).

A continuation of course 309.

313. Engineering Mechanics. (3-0).

A continuation of course 212, with special reference to dynamics of rotation, work, energy, friction, impact, etc.

315. Engineering Laboratory. (0-3).

A modification of course 403, 404.

316. Engineering Laboratory. (0-3).

Same as course 315.

317. Engineering Mechanics. (4-0).

A modification of courses 212, 313.

321. Machine Shop. (0-4).

A modification of course 309.

333. Carpentry. (0-4).

Same as course 103.

334. Structural Steel. (0-3).

The work of this course embraces elementary forging in iron and mild steel, also the elements of fabrication of steel structures.

401, 402. Engineering Design. (0-4).

A study of the design of engines, pumping machinery, etc., from the standpoint of their strength, speed regulation, construction, and economical performance; also a study of the design of power plants, as to capacities and arrangements.

Prerequisite: Mechanical Engineering 301, 302, 303, 304.

Text: No text-book is required, but the student must have a Kent's or a Suplee's hand-book, and a slide rule.

403, 404. Engineering Laboratory. (0-6, 0-4).

Instruction and practice in testing gauges, indicators, fans, pumps, boilers, engines, etc.; also a study of the actual mechanical operation of various machines.

In addition to the work with the apparatus, the student will be expected to make calculations and written reports on the investigations and the results obtained.

Text: Power Plant Testing, Moyer.

Prerequisite: Mechanical Engineering 301, 302.

Prerequisite for abridged courses: Mechanical Engineering 205, 206, or 305.

405, 406. Engineering Design. (3-0).

Drawing room practice in the design of machines and power plants.

Text: Steam Power Plants, Gebhardt.

Prerequisite: Mechanical Engineering 301, 302.

407, 408. Thermodynamics. (4-0, 2-0).

This course embraces a study of the effects of heat upon gases, and the application of thermodynamic laws and principles to the steam engine.

gas engine, hot-air engine, injectors, calorimeters, etc., together with a study of heat efficiencies of these machines and instruments.

Text: Applied Thermodynamics for Engineers, Ellis.

Prerequisite: Mechanical Engineering 301, 302.

Must be accompanied or preceded by Mechanical Engineering 401, 403.

410. Gas Engines. (*2-0*).

The application of the principles of thermodynamics to the design of gas engines. Also the study of the different cycles, methods of governing, and some details of construction, operation and care of various types of gas engines and other internal combustion motors.

Text: The Gas Engine, Jones.

Prerequisite: Mechanical Engineering 407, 408.

415, 416. Engineering Laboratory. (*0-3*).

A modification of course 403, 404.

417. Carpentry. (*0-4*).

The same as course 103, and serving as a foundation for course 418.

418. Manual Training Woodwork. (*1-4*).

A study of manual training, embracing a brief history, purposes, scope, methods of teaching, outlines of courses for the grammar school and for the high school; selection, installation and care of equipment and supplies, etc. The work will be given to the student in the form of lectures, and he will be required to present written reports on problems assigned, and to stand written and oral tests.

The practice will embrace bench work in wood and wood turning, consisting chiefly of exercises selected from proposed courses for the grammar school and for the high school.

FOR STUDENTS IN SHORT COURSES.

23. Carpentry. (*0-4*).

Same as course 103.

24. Forging. (*0-4*).

A modification of course 104.

25. Forging. (*0-4*).

Same as course 24.

31, 32. Elementary Mechanics. (*2-0*).

A simplified modification of courses 101 and 102.

35, 36. Elementary Mechanical Engineering. (2-2).

This course consists of a study of elementary problems involved in engineering, with special reference to mensuration and power transmission. Numerous numerical examples are solved.

37, 38. Shop Work. (0-4).

This course includes practice in bench work in wood, and a limited amount of forging. It is planned with a view of being helpful to those students who expect to live on the farm after leaving College.

39. Elementary Woodwork. (0-4).

This course is similar to course 23, but is more elementary and involves less of working to dimensions, and less of joinery.

40. Elementary Metal Work. (0-4).

In this course the student will be given instruction in the behavior of metals under the action of tools. Laying out, forming, soldering, riveting and brazing of sheet metals; metal spinning, and a small amount of forging are among the things involved in this course.

42. Machine Shop. (0-6).

A modification of course 309, 310.

45, 46. Steam Engines and Boilers. (4-0).

A modification of course 301, with no prerequisite except entrance requirements.

47. Pattern Making and Foundry. (0-4).

A modification of course 201, 202.

51, 52. Elementary Mechanics. (2-0).

Same as course 101, 102.

53, 54. Technical Literature. (2-0).

A study of magazines and papers covering the field of technical work, with special reference to current literature of mechanical engineering.

55, 56, General Mechanical Engineering. (3-0).

A study of steam power plant equipment, including steam turbines, compound engines, auxiliaries, etc., and the general planning and arrangement of power plant equipment.

57. Internal Combustion Engines. (3-0).

In this course the student will study gas producers, and the various internal combustion motors, with special reference to their efficient performance and their troubles.

58. Refrigeration. (2-0).

A practical study of refrigerating methods and machines.

59, 60. Machine Design. (2-4).

A study of the materials of machines, elements of strength and materials, elements of mechanism, principles of lubrication, commercial standards of machine supplies and parts. Also a study of the application of these to the design of machine elements and machines.

Students will be given problems involving the principles taught in the class-room, and will be required to make the calculations necessary for the design of machine elements or parts.

The student will also be given practice in the correct representation of the part designed by making working drawings of the parts and machines. So far as practicable, opportunity will also be given the student to make tracings and blueprints.

61. Machine Shop. (0-4).

A continuation of course 42.

62. Machine Shop. (0-3).

A continuation of course 61, including tool-making and tool-dressing.

63, 64. Engineering Laboratory. (0-3).

A modification of course 403, 404.
Prerequisite: Mechanical Engineering 45, 46.

68. Power Plants. (0-4).

In this course the student will be required to serve as helper in the College power plant at duties which will give him an experience with practical power plant operation.

70. Power Plants. (0-2).

A modification of course 68.

73. Elementary Steam Engineering. (3-0).

Same as course 205.

74. Power Transmission. (3-0).

A study in dynamometers and the transmission of power by belts, ropes, shafting, etc.

75, 76. Steam Engines and Boilers. (4-0).

Same as course 45, 46.

77. *Pattern Making and Foundry Work.* (0-4).

Same as course 41.

78. *Machine Shop.* (0-4).

A modification of course 309.

EQUIPMENT.

In the carpenter shop are excellent double work benches of special design, equipped with quick-acting vises, and the saws, planes, chisels, etc., ordinarily found in a carpenter's kit, each student having a set of edge tools assigned to him alone. Supplementing these are a number of special tools in the tool room.

The wood turning equipment consists of a number of smaller lathes for the ordinary work, and two large pattern-maker's lathes, which admit of wide application. Besides the lathes there are band, jig and circular saws, planer, jointer, and grindstones, power-driven, for the students' use.

A very complete set of hand and bench tools constitute the equipment of the sheet metal workshop. Here the student learns to lay out and construct sheet metal articles of simple design.

The forge room equipment consists of one 250-pound steam hammer, emery wheels, twenty-eight forges, all having power blast and exhaust, and a number of hand forges, the necessary anvils, tongs, and other small tools usually found in the forge equipment.

In the machine shop the equipment is now very satisfactory. It consists of a full line of lathes, grinders, milling machines, automatic machines, etc , so that the student has an opportunity to learn how to operate the ordinary shop tools and machines. The equipment has been recently increased by the addition of a long lathe with extra size hollow spindle for work on shafting. Another of the lathes is a most approved type of motor-driven, geared-head precision machine, and is typical of the best of its kind. The automatic machine is one of the most highly specialized machines for the rapid production of duplicate small parts, and shows the student how such parts can be most cheaply made when the number needed warrants the employment of such means. The tool room contains a large assortment of taps, dies, hand drills, etc., and of drills, reamers, chucks, and other machine accessories, as well as the small tools for laying out work and accurately and properly measuring the same; calipers, micrometers, steel scales, punches, surface plates, etc. Electric portable drills and gunder are also included in the equipment.

The engineering laboratory contains steam engines, gasoline engines, steam turbines, steam and power pumps, fans, water motors, a hot-air engine, condensers, air pump, injectors and a full line of indicators, gauges, pyrometers, thermometers, tachometers, speed indicators, weirs, pitot tubes, prony brakes, platform scales, etc., for conducting tests as outlined in course 403. A register-indicator-record venturi-meter has been installed for use in connection with boiler feed measurement.

In addition, the laboratory has the use of all apparatus of the power plant, consisting of compound engines, Corliss and pumping engines of several different kinds; also the boilers of well-known makes and different types. The testing of these constitutes part of the course in mechanical engineering. The equipment of the steam plant adds larger engines, condensers, air compressor, air lift pump, etc.

For the class-room instruction there are numerous full-size wooden and metal models of different kinds of engines, also sections of actual air-brake equipment and other appliances and fittings for railway and power plant equipment.

Besides the above mentioned equipment might be mentioned the fact that manufacturers have in some instances deposited or donated for the use of the department a number of standard appliances. which prove valuable to the student.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

LIEUTENANT HILL.

The object of the military instruction given at this College is to develop the student physically by the systematic drill and exercise; to inculcate in students that unhesitating and subconscious obedience to constituted authority so essential to good citizenship; to qualify students to be company officers of volunteers or militia.

Graduates of this College may be given the opportunity by the War Department of taking the competitive examination for commissions as second lieutenant in the regular army; and their services are in demand as officers in the organization of native troops in the Philippine Islands.

The Cadet Corps, which includes all students in attendance at the College, is organized as a regiment of infantry, consisting of band and three battalions of four companies each. All military instruction is under the immediate charge of the Commandant.

The officers and non-commissioned officers are selected from the Senior, Junior and Sophomore classes. They are appointed by the Commandant upon the approval of the President. Their appointments are dependent upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

The military system regards a man for his inherent qualities of manhood and encourages ambition and self-reliance; it is an aid in the enforcement of discipline and encourages regularity in attendance upon academic duties; it tends to develop that sense of duty and honor that mark a man as a gentleman.

The courses are as follows:

Practice: All classes, first and second terms, 3 hours a week.

Infantry drill through the school of the soldier, company, battalion and regiment in close and extended order, advance and rear guard, attack, defense, outpost, marches, ceremonies and guard duty. In addition for Seniors and Juniors, target practice, first aid, signaling, sketching, and preparation of company papers.

(Required of all students.)

201. Military Hygiene. (1-0).

This course covers the essential points in the care of troops, particular attention being paid to the following:

Personal hygiene; exercise and physical training; clothing and equipments; the water supply; foods and their preparation; the disposal of waste; the sanitation of camps, marches, and battlefields; the nature and effects of alcohol and other narcotics.

Text: The Elements of Military Hygiene, Ashburn.

202. Drill Regulations. (1-0).

This course is designed to teach the fundamental principles of infantry drill, including guard duty and firing regulations. It includes infantry drill regulations through the school of the soldier, company and battalion both in close and extended order; also guard duty and firing regulations.

Text: Manual of Military Training, Moss.

302. Tactics. (1-0).

This course includes the combat principles of infantry, conduct of marches and camp sanitation.

Text: Manual of Military Training, Moss.

401. Tactics. (1-0).

This course is a continuation of course 302 and is designed to give instruction in company administration and training, writing of field orders and military sketching.

Text: Manual of Military Training, Moss.

War Department publications.

402. International and Military Law. (4-0).

The course covers the principles of international and military law, including the procedure of courts-martial.

Texts: International Law, Davis; Military Law and the Procedure of Courts-Martial, Dudley.

403. Military History of the United States. (3-0).

This course is designed to give a true and accurate military history of the United States and to bring out the defects of our military policy.

Text: Military Policy of the United States, Upton.

404. Military Field Engineering. (4-0).

This course covers the basic principles of military engineering.

Text: Manual of Military Field Engineering, Beach.

405. Fortifications and Intrenchments. (2-0).

This course embraces the principles of modern fortifications and field intrenchment.

Text: Field Fortifications, Fiebeger; Permanent Fortifications, Fiebeger.

406, 407. Ordnance and Gunnery. (3-0).

The course covers the principles involved in the constructian and use of war materials. It is divided into two parts, the theoretical and the descriptive.

The theoretical part includes the study of exterior and interior ballistics, the theories of gun and carriage construction, and the principles of gunnery.

The descriptive part of the course covers the processes of the manufacturing of powders, guns, projectiles and armor; and describes the small arms, cannon, machine and rapid-fire guns in the United States service.

Text: Ordnance and Gunnery, Lissak.

DEPARTMENT OF MODERN LANGUAGES.

PROFESSOR CAMPBELL, DR. SPARKMAN.

It is the object of this department to impart a practical knowledge of French, German, or Spanish, such as will benefit the student in the prosecution of a scientific career.

To this end, the text-books used and the method of imparting instruction are practical. French and German are taught because neither the specialist nor the general student can afford to be ignorant of these literatures; Spanish is taught in view of the rapidly growing intercourse between us and the Latin republics south of us.

Students coming to us, therefore, from the high schools of the State find here the opportunity to continue their linguistic studies by the side of the agricultural and mechanical branches, to which these studies lend effective aid.

In beginning courses a thorough drill in pronunciation, the essentials of grammar, and colloquial exercises, is given through daily oral and written exercises. The reading of simple texts is taken up as early as possible.

The work of the advanced courses consists in the reading of selected texts and magazines, with incidental grammar review and drill in the use of colloquial idioms. Short dictation exercises are frequently given. Special stress is laid upon sight reading. Parallel reading of from 150 to 300 pages of selected prose works is required. In French and German, the reading is gradually adapted to the scientific work of other departments; the texts read in Spanish will be literary and commercial.

Two years of German is required in Course X. In all other courses work in modern language is elective, as shown under the several curricula.

The courses are as follows:

211, 212. French. (3-0).

Grammar and easy reading.

213, 214. German. (3-0).

Grammar and easy reading.

215, 216. Spanish. (3-0).

Grammar and reading.

321, 322. French. (2-0).

Reading of scientific and other texts. Parallel reading.

323, 324. German. (2-0).

Reading of scientific and other texts. Parallel reading.

325, 326. Spanish. (2-0).

Reading of technical and commercial texts; business correspondence. Parallel reading.

The following courses are the same, respectively, as those set next to them in parenthesis:

311, 312, (211, 212); 313, 314, (213, 214); 315, 316, (215, 216); 421, 422, (321, 322); 423, 424, (323, 324); 425, 426, (325, 326).

DEPARTMENT OF PHYSICS.

PROFESSOR WRIGHT, ASSISTANT PROFESSORS MCPHEETERS, SKEELER, MR. MCADAMS, MR. BATES.

The courses in this department are designed to impart some knowledge of the various fields of physics, to teach exact reasoning from experiment to theory, and to prepare for further instruction in the more technical studies of the various departments. Instruction is given by recitation from standard texts, supplemented by numerous demonstrated lectures, quizzes, and practical problems. Physical laws and principles are illustrated from common experience and exemplified by industrial applications.

The laboratory work is designed to give the student a more intimate knowledge of the physical laws and to familiarize him with instruments of precision and methods of measurement. The student is required to present an accurate record of every experiment performed, including the theory involved. Considerable attention is paid to graphic methods of representing physical phenomena. Special attention is paid to the selection, designing, and construction of well adapted equipment, and to the efficient administration of the laboratories.

Practical applications of the principles involved are emphasized throughout the courses.

The courses are as follows:

101, 102. Principles. (2-2).

This course includes the mechanics of solids, liquids, and gases; and the phenomena of heat, light, sound, electricity and magnetism. Instruction is given by recitations, quizzes, problems, and demonstrated lectures. The subject is treated primarily as a pure science, secondarily as a basis for the agricultural courses. Emphasis is laid upon the fundamental physical principles rather than upon the mathematical processes involved. (For general outline, see course 203, 204).

The practice includes experiments about as follows: 9 in mechanics, 5 in heat, 4 in light, 2 in sound, and 10 in electricity and magnetism.

Prerequisite: Students admitted to the Freshman class conditionally and not presenting physics for entrance will not be admitted to this course. See Entrance Requirements and Physics 11, 12.

203, 204. General. (3-2, 3-4).

The scope of this course is indicated by the following outline:

Mechanics: Fundamental units and laws involved in motion, force, power, energy, inertia, elasticity; laws of simple machines, liquids, and gases as they occur in the transformation of force and energy.

Heat: The nature of heat, thermometry, change of state, hygrometry, kinetic theory of gases, transmission of heat, and thermodynamics.

Light: Geometrical optics, lenses, optional instruments, photometry, velocity, wave length, interference, color, and polarization.

Sound: Wave motion and vibrations of elastic media; origin, transmission, reflection, and velocity of sound; characteristics of musical notes.

Electricity and Magnetism: Magnets and magnetic fields; chemical and mechanical production of current; laws and units of measurements of voltage, current, resistance, capacity, inductance, and the thermal effect of current.

In this course, particular stress is laid on the derivation of the various formulas necessary for a thorough understanding of the mathematical relations existing in physical determinations. Much emphasis is placed on practical problems furnished by the instructors.

The practice includes about forty-five experiments, such as moments of force and inertia; modulus of elasticity; acceleration and coincident pendulum; centrifugal force; capillarity and surface tension; expansion of gases; latent and specific heat; thermal and electrical conductivity; mechanical and electrical equivalent of heat; polarized light, spectrum analysis, and wave length of light; the measurement of voltage, current, and resistance with standard instruments. The work is entirely quantitative.

Prerequisite: Mathematics 101, 103. (See Entrance Requirements).

207, 208. General. (2-0, 2-4).

This course is identical with course 203, 204, with the omission of electricity and magnetism.

Prerequisite: Mathematics 101, 103. (See Entrance Requirements).

FOR STUDENTS IN SHORT COURSES.

11, 12. Elementary. (3-2).

Lectures, recitations, problems, and demonstrations in elementary mechanics, heat, sound, light, electricity and magnetism. The nature of the theory is indicated by the outline of the practice.

The practice includes measurements of precision with vernier and micrometer calipers and balances; curve plotting; accurate determinations of length, volumes, densities, forces, moments, stress, expansion, heat exchange; refraction and reflection of light by various forms of lenses and mirrors; velocity of sound and the laws of vibrating strings; measurements of voltage, current, and resistance.

Multiple sets of apparatus permit laboratory experiments to be run parallel to the lectures and recitations.

(See Entrance Requirements).

EQUIPMENT.

The Department of Physics occupies seventeen rooms in the Civil Engineering Building, including four large class-rooms with facilities for giving demonstrated lectures, three well equipped laboratories, four offices, dark rooms, shop, and storerooms. These are supplied with alternating and direct current, storage battery, water, gas, and electric lights. The equipment is sufficient for a great variety of demonstration and laboratory work.

Mechanics of Solids, Liquid, and Gases: Apparatus for determining moment of inertia, centrifugal force, acceleration, mechanical and electrical equivalent of heat, Young's Modulus, etc.; micrometer and vernier calipers, rotators, U. S. Standard Measures, air pumps, hydraulic press, cathetometer, chronograph, balances, and many simple and compound machines.

Heat: Conductometers, thermopiles, expansion apparatus, various types of thermometers, and numerous calorimetric outfits.

Light: Polariscope, spectrometer, vernier microscope, Nicol's prisms, camera, projection lantern, optical bench, Hartl discs, heliostat, gratings, interferometer, and a great variety of lenses and mirrors.

Meteorological Instruments: Standard and Maximum-minimum thermometers, Fortin and aneroid barometers, barograph, thermograph, hygrometer, anemometer, etc.

Sound: Sonometers, tuning forks, organ pipes, and wave motion apparatus.

Electrostatics: A very large static machine and accessories.

Current Electricity: Various types of batteries, rheostats, bridges, galvanometers, induction coils, telephone and telegraph fixtures, mercury arc and electrolytic rectifiers; ammeters, voltmeters, and motors for both alternating and direct current; and complete X-ray outfit.

The department has a well chosen assortment of general and special accessories for use with the above apparatus.

The workshop is supplied with motor-driven machine lathe, rip saw, planer, and drill press; soldering outfit, stock materials, and the usual metal and woodworking tools. In the shop all repairs and improvements are made and the specially devised apparatus, requiring continual test, is constructed. Many of the most useful pieces of apparatus have been constructed in the shop. Economy in time and money is thus effected.

The department library contains several hundred volumes treating of pure physics and kindred subjects.

DEPARTMENT OF TEXTILE ENGINEERING.

PROFESSOR BAGLEY, ASSISTANT PROFESSOR TATUM.

The Legislature having made a liberal provision for the establishment of a Textile School as a department of the College, a suitable building of modern cotton mill construction has been erected, and an excellent equipment has been secured. The building offers excellent opportunities for the study of the details of mill construction.

The equipment has been carefully selected with a view of having a wide variety of the leading makes of cotton mill machinery represented. This will afford the student the opportunity of becoming familiar with such machinery as that with which he is likely to come in contact in the mills of the country.

Instruction will be confined to the manufacture of cotton goods and a thorough training will be given in the manufacture of many classes of cotton yarns and fabrics.

Instruction is given by the use of text-books, lectures, recitation and the practical operation of the machines in the actual production of yarns and fabrics.

The instruction in this department is divided into four sections—Yarn Manufacturing, Weaving, Designing, and Chemistry and Dyeing. These subjects are so treated as to cover the manufacture of all classes of cotton yarns and fabrics.

The dye laboratory is a new addition and contains adequate machinery for instruction in dyeing and bleaching yarn and cloth.

The courses are as follows:

201, 202. Designing. (3-2, 3-0).

This course includes the classification of fabrics; the elementary principles of fabric structure; the explanation of various technical terms applied to designs and fabrics; the representation of drawing-in drafts and harness chains; the design of fancy shirting, madrases, and dress goods, etc.

301, 302. Yarn Manufacture. (4-0, 2-0).

Recitations on the machinery and processes in the manufacture of coarse cotton yarns. Instruction is given with a view of imparting a general knowledge of the machinery and processes, including the study of the raw material; mixing; mixing machinery; construction and operation of feeder and picking machinery, carding, drawing, slubbing, roving, ring spinning, spooling, reeling, and twisting; calculations to determine the necessary gearing to produce given numbers, speeds and production.

Text: Cotton Mill Processes and Calculations, Tomkins.

International Library of Technology, Vol. 76.

303, 304. Designing. (3-0).

The design of lenos; two and three-ply fabrics; Jacquard designing, including the production of original designs, card cutting and lacing.
Prerequisite: Textile Engineering 201, 202.

305, 306. Power Weaving. (3-2, 3-3).

Recitations and lectures on the construction, operation and adjustment of the plain and fancy looms; a study of the timing and setting of the various parts, and weave room calculations.
Text: International Library of Technology, Vol. 80.

307. Fabric Analysis. (1-0).

Dissection of small samples of fabrics with a view of their reproduction.
Prerequisite: Textile Engineering 201, 202.

317. Cotton Classing. (0-2).

The course covers the handling of the crop from the field to the mill; the method of establishing classes for cotton and their values, and practice in judging the value of samples.

401, 402. Yarn Manufacture. (3-4).

Recitations and lectures; a continuation and more exhaustive treatment of the subjects of course 301, 302. In addition, the study of warp preparation and of the machinery necessary for the manufacture of fine cotton yarns, including the sliver lap machine, ribbon lap machine and comber, and a study of the spinning mule, organizations for the manufacture of all classes of yarns and the preparation of fancy warps.
Text: International Library of Technology, Vol. 77.
Prerequisite: Textile Engineering 301, 302.

404. Fabric Analysis. (1-0).

A continuation of 307.
Prerequisite: Textile Engineering 307.

405, 406. Sizing. (3-0).

This course includes a thorough study of all materials used in sizing cotton yarns. The best methods of testing for adulterants commonly found in these materials are given, as is also the most modern methods of their application to the yarns. The machinery and its operation is carefully studied.
Text: Chemistry and Practice of Sizing, Bean.

407, 408. Weaving. (3-4).

Recitations and lectures on the construction, operation and adjustment of leno and Jacquard machines. A study of the different "tie-ups" use in Jacquard weaving. Sketching the most important motions on automatic and dobby looms.

Prerequisite: Textile Engineering 305, 306.

410. Mill Management. (3-0).

Lectures and recitations on the general management of cotton mills, including the study of fire protection, cost of production in the various departments, labor conditions and wages, care of mill and mill village.

Text: International Library of Technology, Vol. 78; Cotton Mill Commercial Features, Tompkins.

412. Magazine Review. (1-0).

Students will report in class on articles assigned them in the textile magazines.

FOR STUDENTS IN SHORT COURSES.

11, 12. Designing. (3-0).

A modification of course 201, 202.

13, 14. Yarn Manufacture. (3-2, 3-4).

A modification of course 301, 302.

15, 16. Weaving. (3-4, 3-2).

A modification of course 305, 306.

17. Cotton Classing. (0-2).

Same as 317.

51, 52. Yarn Manufacture. (3-4).

A modification of course 401, 402.

53, 54. Designing. (3-0).

A modification of course 303, 304.

55, 56. Weaving. (3-4).

A modification of course 407, 408.

57, 58. Fabric Analysis. (1-0).

Dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, cutting cards from original designs.

60. Mill Management. (2-0).

A modification of course 410.

EQUIPMENT.

The building itself is a modern cotton mill model and is equipped in general with an automatic system of sprinkler heads for fire protection. The building is heated with steam and the atmosphere is kept in ideal condition for the manufacturing of cotton by a system of humidifiers. The power is furnished by electric motors conveniently distributed over the building, while the shafting, pulleys and hangers serve as an example of standard construction of such things.

In the department of yarn manufacture there is every equipment necessary to produce carded or combed yarns, and with it machines for making chain or slashed warps of either single or double yarns.

In the weaving room there are ten hand looms for the weaving of short fancy patterns. There are fourteen Northrop looms, which are entirely automatic and two plain looms for ordinary plain goods. There are two ordinary dobby looms, with box motion to insert four colors for filling; one dobby loom for weaving terry towels; one dress goods loom, with dobby and boxes for making a seven-colored pattern; one loom for weaving narrow Jacquard dress goods, and one with Jacquard loom for weaving table covers.

The finishing machinery is for ordinary ducks, sheetings or drills, and consists of an inspecting machine, railway sewing and rolling machine, a brushing and calendering machine, and a cloth-folding machine.

SUMMER SCHOOL OF COTTON CLASSING.

The eighth session of the Summer School of Cotton Classing will open June 16, 1916, and will continue six weeks.

The object of the course in Cotton Classing is to prepare young men for cotton buying and the running of cotton warehouses, and to offer to farmers the opportunity to increase their knowledge of the leading farm crop of Texas.

A study is made of the elements which determine the commercial grades of cotton, the influences which affect the price of cotton; the system of financing the crop from field to the factory, and the relation of exchanges to the business in general. New samples are put each day on the cotton tables for practice, and the work is patterned somewhat after that of a cotton office.

The first hour each morning will be spent in the study of Miller's "Cotton Trade Guide and Students' Manual," the government's report on "Cotton Exchanges," and other literature on the subject, together with the handling of banking and shipping papers used in the business.

EXPENSES.

Registration fee	$10 00
Board at local hotel, per month	20 00
Room at local hotel, per month	8 00
Board in Mess Hall and room in Dormitory, per week	5 00

The registration fee is in no case refunded.

EQUIPMENT.

Students in the Summer School will have the use of the library and reading room, and of the shower baths. Those interested will have the opportunity to inspect the College farm, sheds, barns, silos, dairy, creamery and experimental plots.

Instruction in cotton classing is given in the Textile Building, and there the student can be shown the processes of manufacturing cotton and where the cotton goes.

The government standards for classing cotton, which have been adopted by nearly all the leading exchanges with the exception of New York, will be used.

The State Experiment Station has in its cotton laboratory a fiber testing machine, showing the breaking strength of the individual fiber, and an instrument for measuring the length accurately. Demonstrations will be made showing the use and value of these machines.

DEPARTMENT OF VETERINARY MEDICINE.

PROFESSOR FRANCIS, PROFESSOR MARSTELLER, DRS. DUNN, BETHELL.

The physical equipment of the Veterinary Department consists of offices, class-rooms and laboratories, which occupy the first floor of the Chemical and Veterinary Laboratory Building; a hospital, erected in 1908, which enables the student to witness the treatment and management of sick animals; and a dissecting room, 40x60 feet, with modern equipment, which affords ample room for the dissection of large animals. The department is fairly well supplied with books, instruments, skeletons, parasites, dry and wet preparations, charts, etc.

During the coming year a new building, costing $100,000, will be erected, which will be especially designed for this work.

The courses offered for 1916-17 are as follows:

ANATOMY.

111. *Anatomy of the Horse.* (*3-6*).

This will embrace a careful study of the bones, joints, and muscles, and will include the histology of the tissues involved.

Text: Anatomy of Domestic Animals, Sisson.

112. *Anatomy of the Horse.* (*3-4*).

During this term the thoracic and abdominal viscera will be studied. This will include the histology of the organs.

Text: Anatomy of Domestic Animals, Sisson.

201. *Anatomy and Physiology of Domestic Animals.* (*2-2*).

This course is intended as an introduction to the study of Veterinary Medicine. It treats the fundamental processes of animal nutrition in detail, so that each student may be prepared to meet the problems that arise in the economic production of beef, pork, and dairy products.

Reference books: Physiology of Domestic Animals, Smith; Veterinary Anatomy, Sisson.

During the practice period there will be demonstrations on the composition and circulation of the blood, dissections of the heart, bowels, nervous system, eyes, muscles, and studies of the bones, joints and ligaments. The class will be divided into sections of four each, so that each student can be graded on his work.

PHYSIOLOGY.

121. *Physiology of the Domestic Animals.* (*3-2*).

Lectures on the Physiology of Nutrition and Secretion, and practice in the laboratory examining natural and artificial digestive juices, ferments, milk, urine, etc.

Text: Veterinary Physiology, Smith.

122. *Physiology of the Domestic Animals.* (*3-2*).

Lectures on the Physiology of the Muscular, Nervous, Respiratory and

Circulatory Systems; accompanied by laboratory practice in which the student will obtain graphic records of these phenomena.

Text: Veterinary Physiology, Smith.

VETERINARY MEDICINE.

202. Non-infectious Diseases. (2-2).

A discussion of diseases of locomotion, digestion, respiration, etc., of a non-contagious nature.

Text: Veterinary Medicine, Vols. 1, 2, 3, 4, 5, Law.

Prerequisite: Veterinary Medicine 201.

401. Infectious Diseases. (2-0).

This lecture course will embrace a discussion of such diseases as anthrax, black leg, rabies, glanders, hog cholera, tuberculosis, Texas fever, infectious anemia, and their remedies. Especial mention will be made of those which may be injurious to public health through the consumption of meats or milk. Students have abundant opportunity to see hogs treated for cholera, and cattle for Texas fever.

Text: Pathology of Infectious Diseases of Animals, Moore.

Prerequisite: Biology 205, Veterinary Medicine 202.

SURGERY.

302. Obstetrics. (2-2).

A study of the reproduction of animals. During the consideration of the subject, many points on embryology, barrenness, artificial breeding, castration of males and females, are brought out.

Text: Veterinary Obstetrics, Williams.

Practice will embrace a dissection of the reproductive organs, and following this are frequent opportunities for observing diseases and irregularities incident to reproduction.

Prerequisite: Veterinary Medicine 202.

402. Obstetrics. (2-2).

Same as course 302.

FOR STUDENTS IN SHORT COURSES.

12. Animal Diseases. (3-2).

A popular course on the common diseases of animals on the farm, and how to prevent and cure them.

Text: Veterinary Studies for Agricultural Students, Reynolds.

A hasty review of the essential features of animal nutrition precedes the practice proper. Dissection of the organs of nutrition is required, and following this an examination of the feet, eyes, etc., and the simpler surgical operations. Animals are examined for soundness, and each student must do the required work at its proper time.

52. Animal Diseases. (3-2).

Same as course 12.

THE TEXAS AGRICULTURAL EXPERIMENT STATION.

B. YOUNGBLOOD, DIRECTOR.

The Texas Agricultural Experiment Station is one of the four major divisions of the Agricultural and Mechanical College of Texas. Its function is the investigation of agricultural problems. It consists of a central station at College Station and thirteen substations, located in various sections of the State, as follows: Angleton, Beaumont, Beeville, Chillicothe, Denton, Lubbock, College Station, Nacogdoches, Pecos, Spur, Temple, Troup, and near Del Rio. These substations are used in extenuation of the work of the Main Station, so that State-wide information upon the various problems may be secured. The Experiment Station system is at the present time supported by $30,000 Federal and $135,000 State money per annum.

The work of the Station comprises the investigation of the more important problems of veterinary science, chemistry, horticulture, animal husbandry, entomology, agronomy, plant pathology and physiology, poultry husbandry, forestry, farm management, and dairy husbandry, and the Feed Control Service.

The Station is a valuable source of information for students of agriculture and the farmers of the State. It is looked to for the facts by the School of Agriculture, the Extension Service, and other agencies for the dissemination of agricultural information. The work of the Main Station and of the feeding and breeding substation at College Station presents to students very unusual opportunities, both in theoretical instruction and practical experience.

The work of the Station by divisions is as follows:

DIVISION OF VETERINARY SCIENCE.

The Division of Veterinary Science has done much valuable work on "Texas Fever" or tick fever of cattle, and is engaged in a further study of this problem and means of controlling it. This work has resulted in reducing the death rate from about 98 per cent. to 2 per cent. Other important investigations are being pursued. Probably the most important of these investigations is that of *infectious anaemia,* an obscure, fatal disease of horses and mules, which causes a tremendous annual loss to the farmers and stockmen of the State. In addition, other studies of diseases affecting farm animals are being made, including "big head" of sheep and goats, contagious abortion of dairy cattle, garget, and so forth.

DIVISION OF CHEMISTRY.

The chemist in charge of the Division of Chemistry of the Station is named by law as State Chemist, and as such enforces the fertilizer law of Texas. In this work the division has been of much valuable service to the people of Texas.

The Division of Chemistry conducts investigations of the composition of Texas soils, the composition and digestibility of feeding stuffs, and important work with fertilizers. Other lines of work are being pursued, including studies of irrigation waters, composition of paints, and so forth. Bulletins issued upon work of this division have been very much in demand.

DIVISION OF HORTICULTURE.

The Division of Horticulture is conducting plant breeding work with dewberries, blackberries, and other members of the genus *Rubus*. Other work is being done with "Crown Gall" and possible means of its control. Other important projects are being carried on the Main Station, and on the substations, orchard and garden work is being conducted, from which the Station is securing much valuable information. The work at the Main Station is under the supervision of H. Ness, horticulturist in charge, while the work on the substations is under Mr. W. S. Hotchkiss' immediate supervision.

DIVISION OF ANIMAL HUSBANDRY.

The Division of Animal Husbandry conducts feeding and breeding investigations of vast importance to Texas agriculture. The work of this division in proving that silage is the most economical roughage for fattening beef cattle, alone has proved to be worth many thousands of dollars annually to the feeders of Texas. The results secured in this work and reported in bulletins, are well known to the stockmen and farmers of the State.

Considerable animal breeding work is being conducted by this division. In sheep breeding, crosses have been made of the Karakule with the more common breeds, with a view to studying inheritance problems and at the same time producing a more desirable type of mutton and fur-bearing sheep adapted to Texas conditions. Considerable work has been done in fattening lambs under ranch conditions. This work has been reported upon in bulletin form.

The swine work is progressing rapidly. A good foundation herd was first secured, and then investigations were begun with a view to determining the most economical pasture for hogs and also the most economical rations for brood sows, young growing hogs, and porkers. Some results of value have been secured by the Station, which will be available in bulletin form in due time. Other work with swine which will have an important bearing upon the swine industry of the State will be taken up just as fast as facilities are secured for the purpose.

Investigations that will have a definite bearing upon the goat industry of the State are now under way, and with the establishment of a substation in the goat and sheep region of the State, this work will no doubt progress very rapidly. The goat industry of the State is an important factor in the live stock growing phase of Texas agriculture, and benefits arising from this work will have a far-reaching effect. Considerable work has already been done with Angoras and the work is being continued.

DIVISION OF ENTOMOLOGY.

The Division of Entomology is making a study of the beekeeping industry of the State, and bulletins of great popular interest have been issued upon this subject. The life-history of the wax-moth has been determined and reported, and methods of control worked out. Investigations have been made and results reported in bulletin form upon the development and control of the turnip louse, the Harlequin cabbage bug, weevils injurious to peas, beans, and so forth; work has been done on the prevalence of the green bug or spring grain aphis, in cooperation with the College, and published; a very comprehensive bulletin on sprays and spraying has been issued. Important investigations relating to insects and their control are being continued and will be reported upon from time to time.

The entomologist in charge of the Division of Entomology is named by the law as State Entomologist, and as such has charge of the foul brood eradication work of the State. Rules and regulations have been issued, and this work is well in hand, under the direction of the entomologist and his corps of inspectors.

DIVISION OF AGRONOMY.

The Division of Agronomy is conducting investigations with farm crops and soil improvement. Under farm crops studies particular attention has been given to variety tests of corn and the improvement of the crop by securing pedigreed strains. Additional work with corn has been conducted with seeding rates and the effect of distribution of hills upon yield. A study of oats is being made, dealing particularly with the purification of certain types of Red Rust Proof and the improvement of these types by individual selection. The legume work consists largely of variety tests of cowpeas, soybeans and peanuts for hay and seed production. Permanent pasture studies are being made. Under soil improvement, studies are being made of crop rotations versus continuous cropping, and of cultural methods and agronomic fertilizer work.

This division has been of immense service to the State by the introduction and dissemination of crops. Among these might be mentioned Sudan grass, which has been introduced into Texas and disseminated by this division. Sudan grass has been proved to be the best adapted hay grass to Texas conditions, and is now grown in all parts of the State. The introduction of Sudan grass, alone, has been of great service to Texas, and has brought the growers many thousands of dollars, to say nothing of the abundance of fine hay which heretofore has been bought. A complete bulletin on Sudan grass has been issued, and has proved to be very popular, not only with the people of Texas, but also of other States and foreign countries. Valuable work has also been done in the introduction and dissemination of Rhodes grass, Japanese sugar cane, a forage crop, and other plants well suited to Texas.

DIVISION OF PLANT PATHOLOGY AND PHYSIOLOGY.

The Division of Plant Pathology and Physiology is conducting investigations on the blossom-end blight and other diseases affecting melons, with a view to determining means of control. Work is also being done on the sweet potato, and also of the corn "smut" trouble, so common in many parts of Texas. This division is well equipped and much valuable information will be secured through its work. The division is cooperating with the Bureau of Plant Industry of the United States Department of Agriculture, in making a plant disease survey of Texas.

DIVISION OF FARM MANAGEMENT.

The Division of Farm Management, which is conducted in cooperation with the Office of Farm Management of the United States Department of Agriculture, is making a study of cropping systems and farm practices, including the cost of production of various crops and the economical distribution of farm labor. In short, the work of this division is the study of the business conduct of the farm, with a view to pointing out and securing the general adoption of more economical practices thereon. The State heretofore has not contributed any financial support to this work, it being maintained entirely by funds allotted by the United States Department of Agriculture.

DIVISION OF POULTRY HUSBANDRY.

The Division of Poultry Husbandry, though only two years old at the present time, has made satisfactory progress in investigation work. A model poultry plant has been constructed, consisting of houses, incubator and brooder house, fences, grazing plats on which are grown green feed crops, and other necessary equipment secured. A flock of purebred chickens has been obtained, and work has been done to determine the best rations for laying hens, young chicks, and so forth. Preparations are being made for elaborate work in poultry problems, and there is no doubt but that the work of this division will answer a long-felt and often expressed need of the poultry industry in this State.

DIVISION OF FORESTRY.

The Division of Forestry of the Station was established during the past year, and therefore sufficient time has not elapsed since its beginning to allow much work of more than a preliminary nature. The forester is by law the State Forester, and as such has charge of all forestry control work in the State. The forester is also Professor of Forestry in the College.

Some initial work has been done by this division, principally in establishing experimental arboreta at the Main Station and also at various substation farms. Because of the immense importance of the subject the work in forestry promises to become one of the most valuable lines of endeavor on the station.

DIVISION OF PLANT BREEDING.

For a number of years the Texas station has been conducting more or less work in plant breeding. This, however, has been interrupted from time to time by changes in personnel of the staff. For the past few years the work has been developed gradually until it is now of considerable proportions. The station now has definite projects covering the improvement of practically every farm crop, and in addition to this, has an important project entitled "A Study of Inheritance in Cotton." In order to relieve the men in agronomy, primarily engaged in other lines, of the volume of this work, the Division of Plant Breeding has been created, and Dr. E. P. Humbert, formerly of Cornell University, has been employed as a specialist in charge of this work.

DIVISION OF FEED CONTROL SERVICE.

The Director of the Station is the official charged with the enforcement of the State Pure Feed Law, which he does through the Division of Feed Control Service. The feed law requires the registration of all concentrated commercial feeding stuffs offered or exposed for sale within the State, showing the minimum content by percentage of protein and fat, and the maximum of crude fiber contained, as well as true labeling and correct standard weights. Samples of various feeding stuffs are drawn from time to time from stock found on the market, by duly authorized inspectors, and sent to the Feed Control Service, to be analyzed. The results obtained by these analyses are compared with the manufacturers' guarantees on file here, and it is then determined whether or not the provisions of the law are being fulfilled. The rulings specifying the names and guaranteed analyses of the various feeding stuffs offered for sale in the State are based on the chemical analyses of a large number of samples and a study of the methods of milling. It is the policy of the station to continue investigations of the various feeding stuffs and the milling problems involved, in order that the provisions of the law may be enforced. The station follows the policy of working in harmony, as far as it can, with the milling people, and conferences are held from time to time so that feeders and manufacturers may present their views from time to time. By this method the enforcement of the law has been handled in a manner as nearly satisfactory to all concerned as could be expected. The Director works in cooperation with the Federal Pure Feed Control relative to interstate shipments, and in harmony with the National Association of Feed Control Officials, with which the Texas Feed Control Service is affiliated.

The station is growing rapidly. It now controls or owns 5088 acres of land, worth $132,800. The inventory for the year ended August 31, 1915, shows a total valuation of $182,315.40, inclusive of land.

The results secured by the work of the various divisions and substations of the Texas Agricultural Experiment Station are reported from time to time in bulletin form, sent free to farmers of the State and others interested in agricultural development, upon application to the Director at College Station. In addition to these bulletins involving more or less investigations into agricultural problems, press bulletins giving popular information in regard to agricultural topics, are issued from time to time. The Director and various members of the station staff carry a heavy correspondence with farmers and stockmen of the State, in cooperation with the Extension Service, disseminating in this way useful and valuable information in regard to local conditions and agricultural problems in the different sections of the State.

The station is available at all times for service to citizens of the State, in any consistent manner. All communications intended for the station should be addressed to the Director, Agricultural Experiment Station, College Station, Texas.

THE TEXAS ENGINEERING EXPERIMENT STATION.

D. W. SPENCE, DIRECTOR.

The Texas Engineering Experiment Station is composed of all the engineering departments of the College, and was organized for the purpose of affording a service to the industries of Texas similar to that afforded to the agricultural interests by the Agricultural Experiment Station; of assisting the urban population of the State in solving the technical problems of urban life; of investigating engineering and industrial problems of especial importance to Texas, and of disseminating information along these lines.

The Texas Engineering Experiment Station staff consists of the entire teaching force of the following departments of the College:

Architecture and Architectural Engineering.
Chemistry and Chemical Engineering.
Civil Engineering.
Economics.
Electrical Engineering.
Mechanical Engineering.
Physics.
Textile Engineering.

Bulletins have been issued as follows:

No. 1. Earth Roads.
No. 2. Relation and Value of Chemistry to Industry
No. 3. The Comparative Value of Fuels.
No. 4. Highway Bridges and Culverts.
No. 5. Highway Engineering at the A. and M. College.
No. 6. Household Conveniences.
No. 7. Gravel Roads.
No. 8. Electricity in the Country Home.
No. 9. Cotton Classing and Marketing.
No. 10. Sewage Disposal for Country Homes.
No. 11. Purchasing by Specification.
No. 12. Demonstration Roads at the A. and M. College.

For copies of these bulletins and information regarding the work of the Texas Engineering Experiment Station, address D. W. Spence, Director, College Station, Texas.

EXTENSION SERVICE.

(Agricultural and Mechanical College of Texas and United States Department of Agriculture Cooperating).

CLARENCE OUSLEY, DIRECTOR.

Extension in agriculture and home economics is a work recently undertaken by the Agricultural and Mechanical College, under the joint direction of the College and the United States Department of Agriculture, and is sustained by appropriations from both the Federal and State governments under the Smith-Lever Act of Congress. The general purpose is to carry information from the College, the Experiment Stations, and other sources of information, research, and demonstration to persons who cannot attend the College. The service is supplemented by several cooperative projects of the United States Department of Agriculture which are maintained chiefly by the department. Under the cooperative agreement between the College and the department, practically all activities of the department in Texas are correlated with the service of the College. Besides the important undertaking of farm demonstration through county agents sustained jointly by the department, the College, and the community, the service includes information and demonstrations for the development of better farming and home keeping, and in a broad way for the promotion of rural welfare. For the fiscal year beginning July 1, 1916, funds will be available for establishing farm demonstration work and home demonstration work in fifteen or twenty counties in addition to those now enjoying this service. Applications for the work should be addressed to the Director of Extension. The specialists of the staff will respond to requests for special service in communities where there is no agent, and our bulletins and literature will be sent on application. The bulletins now available are as follows:

1. Methods of Sewage Disposal for Country Homes.
2. Money Crops in Place of Cotton.
ES3. Peas and Peanuts.
ES4. Cotton Crop Mortgage Credit.
B4. The Dairy Cow.
B5. Successful Marketing—East Texas Fruit and Truck.
B6. Sweet Potatoes for Profit.
B7. Value of Cotton (exhausted).
B8. Home-made Household Conveniences.
B9. Rations for Fattening Cattle for Market in Texas.
B10. Poultry in Texas.
B11. Land Bedding and Methods of Drainage.
B12. Boys' Agricultural Club Work.
B13. Suggestions for the Better Care of Texas Peach Orchards.
B14. Outline of Extension Work in Agriculture and Home Economics.
B15. Seed Testing—Boys' Agricultural Club Work.

B16. Boys' Agricultural Club Work (suggestions concerning corn growing).
B17. Peanuts and Pigs.

In addition there is issued twice a month an Extension Service News Letter of seasonal advice, and numerous circulars from time to time covering both matters of general agricultural interest and matters of unexpected development. Besides the activities thus indicated, the Extension Service maintains the following undertakings:

LOCAL SHORT COURSES.

During the periods of comparative idleness on the farm, during the fall and winter, and especially during the period between the laying by and the gathering of crops, the College conducts short courses in agriculture and home economics. These courses continue for a period of three days in each place, and are conducted both by lecture and demonstration. Communities desiring short courses should apply well in advance of the time to the Director of Extension.

ORGANIZATION AND MARKETING.

An important agency in successful agriculture is organization for diversification and marketing. The College is prepared to assist groups of farmers in the formation of such associations for productive purposes for marketing and for credit. Information will be furnished on application concerning successful undertakings in cooperative effort.

HOME ECONOMICS.

In the view of the College and the Department of Agriculture, the farm home is an essential part of the farm establishment. It is more than a dwelling place, and the work of the housewife is a vital factor in the success of the farmer. Through the home demonstration work, through special efforts in dairying, gardening, orcharding, and poultry-keeping, and by means of the organization of rural women for the study of their household problems, the Extension Service undertakes the betterment of the rural home.

BOYS' AND GIRLS' CLUBS.

While rendering service to adult farmers, the College, true to the mission of an educational institution, looks to the rising generation as the greatest agency of rural welfare. Therefore, special efforts are made under trained leadership, by practical demonstration and by diligent instruction to give the boys and girls a proper understanding of agriculture and home economics, and to prepare them for successful and happy life in the country. The particular projects maintained are boys' agricultural club work, boys' live stock club work, girls' canning club work, and girls' poultry club work.

FERTILIZER CONTROL SERVICE.

G. S. FRAPS, STATE CHEMIST.

The chemist to the Texas Experiment Station is designated by law as State Chemist, and has charge of the enforcement of the fertilizer law. Under his direction, fertilizers are inspected, sampled for analysis, the samples analyzed, and the results published as bulletins of the Experiment Station. It is also the duty of the State Chemist to investigate the composition, properties, and agricultural values of fertilizers, or fertilizer materials, and to conduct experiments relative to the value of fertilizers. Such investigations are being made, and the results published from time to time. The people of the State are furnished with information concerning fertilizers, by means of personal letters, bulletins, and otherwise. Cooperative fertilizer experiments are made with farmers, so that they can test the effects of various combinations of fertilizers on their own land.

Analyses are made of soils, irrigation and domestic waters, fertilizers, etc., when the analysis would be of public benefit along the lines of agricultural chemistry, and when the samples are taken in accordance with the requirements necessary to secure a suitable sample. Persons who desire to secure an analysis should request further information and instructions for sampling, as samples not properly taken will not be accepted.

Analyses of feeding stuffs for the Feed Control Service, and chemical investigations of their composition and properties, are also made by the State Chemist.

OFFICE OF STATE ENTOMOLOGIST.

F. B. PADDOCK, STATE ENTOMOLOGIST.

By law the entomologist of the Texas Agricultural Experiment Station is ex-officio State Entomologist of Texas, and his headquarters are at College Station. The State Entomologist is charged with enforcing the laws of the State relative to diseases of honey bees and with furnishing citizens of the State information concerning injurious insects and their control.

OFFICE OF STATE FORESTER.

J. H. FOSTER, STATE FORESTER.

By act of the Thirty-fourth Legislature the office of State Forester was established, together with a department of forestry at the Agricultural and Mechanical College, and a division of forestry of the Agricultural Experiment Station with headquarters at College Station. In accordance with the law the State Forester has direction of all forest interests and all matters pertaining to forestry within the jurisdiction of the State. He is charged with the duty of enforcing all laws pertaining to the protection of forests and woodlands, preventing and extinguishing forest fires, collecting data relative to forest conditions, and cooperating with counties, towns, corporations and individuals in preparing plans for the protection, management and replacement of trees, wood lots and timber tracts. Under the forestry act the State is authorized to accept gifts of land to the State to be used so as to demonstrate the practical utility of timber culture, water conservation and as refuges for game. The board of directors shall have the power to purchase lands in the name of the State, suitable chiefly for the protection of timber, as State forests, using for such purposes any special appropriations or any surplus money not otherwise appropriated which may be standing to the credit of the State forestry fund. All moneys received from the sale of wood, timber, minerals, or other products from the State forests and penalties for trespassing thereon shall be paid into the State Treasury and shall constitute a State forestry fund.

GENERAL INFORMATION.

GRADES AND EXAMINATIONS.

Records of the work of each student are kept by the instructors in the several departments. The student's standing is indicated by marks based on 100 as a maximum. Examinations are held at the end of each term, and the student's term grade is determined by combining his daily average with his examination grade, giving to the former a weight 2 and to the latter a weight 1. The passing mark is 70 for the Junior and Senior classes, and 66 for all other classes; but if the daily grade be below 55, the term grade will be E; and if the examination grade be below 55, the term grade will not be higher than D.

ABSENCES.

When a student is absent from recitation a considerable number of times, his absences are taken into account in making up his term grade, unless the work missed is satisfactorily made up before the time set for the examination.

REPORTS.

Soon after the end of each term a report of the student's standing is mailed to his parent or guardian.

Reports are made in terms of letters, with the following meanings: 90 to 100, inclusive, A; 80 to 89, inclusive, B; passing mark to 79, inclusive, C; from 55 to the passing mark, D; below 55, E. In "practice," only two grades are given: P, passed; F, failed.

ADVANCEMENT.

No student will be advanced from a lower to a higher class who has deficiencies in more than eight term-hours of work.

AMOUNT OF WORK—BACK WORK.

The amount of work to be taken by regular students is prescribed in the several curricula; irregular students must take such studies as may be prescribed in each case; they must in each term take all back work scheduled for the term; they are required to take at least 18 term-hours of work, and are not allowed to take more than 4 term-hours in excess of the amount required of the class to which they belong.

FEE FOR CHANGING COURSES OR TAKING UP NEW SUBJECTS.

For changing from one Course to another at any time after the beginning of the term there will be a fee of three dollars. For taking up a new subject later than two weeks after the beginning of a term there will be a fee of one dollar.

ELECTIVE STUDIES.

Elective studies are to be chosen by the student under the advice and direction of a member of the Faculty designated for the purpose, and subject to schedule. The right is reserved to withdraw any course not required for graduation, if it should be chosen by fewer than five students.

DEFICIENCY EXAMINATIONS.

In each term there is held a series of examinations for the removal of deficiencies incurred in the preceding term. These examinations are open only to students who have a term grade D; and to those absent from the regular examination with excuse, provided they were eligible to take the regular examination. Special examinations will in no case be given without Faculty action.

The deficiency examinations for the courses given during the second term of the session of 1916-17 will be held according to the following

SCHEDULE.

September 25.		September 26.	
8:00 a. m.	1:00 p. m.	8:00 a. m.	1:00 p. m.
Agron. 22, 24, 26 Arch. 26, 36 Chem. 102 C. E. 10, 11 D. H. 3, 22 E. E. 5, 6, 12 Ent. 2, 24 Hort. 2, 4, 22 M. E. 11, 102 Mil. Sc. 1 Phys. 4, 6, 7 T. E. 2a Vet. Sc. 3	Ag. Eng. 4 A. H. 3, 4 Arch. 27, 35 Biol. 14, 102, 104 Chem. 2 Ch. E. 3 C. E. 3, 7, 12 E. E. 13 Hist. 2 Math. 14, 16, 102 M. E. 3, 5, 5a Mod. Lang. 1, 3, 5, 214 Phys. 102 T. E. 3, 5 Vet. Sc. 4, 12	Ag. Eng. 5 Agron. 3 A. H. 22 Arch. 106 Chem. 1, 1a Chem. 22 C. E. 6a, 102 D. H. 102 E. E. 22 Engl. 2, 4, 12, 22 Hort. 6 Math. 5, 18, 104 M. E. 32, 36, 46 Phys. 8, 12, 14a T. E. 1, 6, 12	Ag. Ed. 4 Ag. Eng. 6 Agron. 2a A. H. 5 Biol 2, 3 Chem. 4, 4a C. E. 4, 9 Draw. 104 E. E. 2, 4 Hort. 5, 12 Math. 12 M. E. 4, 6 T. E. 14, 16

EXEMPTION FROM MILITARY DUTY.

Mature men who enter with advanced standing in a considerable number of subjects may, for reasons satisfactory to the Faculty, be excused from military duty. This privilege is intended to apply particularly to men who have had considerable experience in teaching or in other professional work.

GRADUATION.

A diploma of the College, with the degree corresponding to the course of study pursued, will be granted students who complete one of the regular courses and pass satisfactory examinations on all of the branches therein.

No degree will be conferred without a residence of at least one year at the College. The diploma fee is $5.00.

HONORS.

At the end of each session students who have during the year received no term grade below B and have no deficiency in "Practice" are announced as "Distinguished."

EXPULSIONS.

At a joint session of the Board of Regents of the University of Texas and the Board of Directors of the Agricultural and Mechanical College, held at College Station, Texas, from June 30 to July 1, 1896, the following order was made:

> "It is ordered, that hereafter, when any student shall be dismissed or expelled from either of the branches of the University of Texas on account of any immoral or other conduct which shall render him an unfit character to be matriculated in any of such branches, it shall thereupon be the duty of the branch so expelling or dismissing such student to immediately notify the other branches of their action, whereupon such other branches shall refuse to receive such student for matriculation, or even for examination, should he apply therefor, until the branch which has so expelled or dismissed him has rescinded or reconsidered its former action, and recommended such student for admission into such other branch at which he may apply."

LIBRARY.

The College Library was completely destroyed by fire May 27, 1912. Through the generosity of friends of the College in Houston, it has been possible to make a beginning in its re-establishment. The Library consists of something over 4500 volumes, exclusive of approximately 1300 bound public documents, and over 15,000 pamphlets. It is chiefly a reference library, containing standard and technical works bearing particularly upon lines of study pursued in the College. The greatest care has been exercised in the selection of books in each line. With the exception of books of general reference, current periodicals, and books temporarily reserved by certain departments for required reading, all books are loaned for home use for a period of two weeks with the privilege of renewal for the same length of time.

The Library subscribes to over ninety standard magazines, reviews, and technical journals, besides the leading newspapers of the State and some representative journals of the country. A large number of complimentary periodicals and exchanges, chiefly of a technical nature, are received.

The Library is a United States designated depository and receives copies of all Federal publications. A card index is maintained of all publications of the United States Department of Agriculture and of the various State Experiment Stations.

The Library is open from 8 a. m. to 5:30 p. m. and from 7:30 to 10 p. m. on week days and from 2 to 5 p. m. on Sundays.

RELIGIOUS AND MORAL CULTURE.

There is religious service in the chapel every Sunday for the corps of students and the residents of the campus. A Sunday school for

Bible study, attendance at which is voluntary, affords additional help in the way of ethical training. Every effort is made through lecture and personal example to develop and protect good morals in the young men attending the institution.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Young Men's Christian Association is the largest laboratory on the Campus. Its experiments and their results in moral and religious culture are exerting a powerful influence in the education of A. and M. students for an efficient life of service. It conducts religious meetings and lectures on Sunday. In September, 1915, 565 students enrolled in systematic Bible study. Bible classes are conducted under student and professorial leadership. The Association employs a General Secretary, who devotes his entire time to the work.

A new building is now occupied by the Association. This $75,000 building provides social and game rooms and rooms suitable for the religious work of the Association.

ATHLETICS.

The usual forms of athletic sports are permitted. The College is a member of the Texas Intercollegiate Athletic Association and of the Southwestern Intercollegiate Athletic Conference. The general rules of eligibility of both these organizations have been adopted by the Faculty. The Faculty Committee on Athletics is entrusted with the general oversight of athletics.

BAND.

An attractive feature is a regularly organized cadet band. Under the direction of a leader employed by the College, it furnishes music for occasions of social and military importance, gives open-air concerts in season, leads the regiment in marching to dinner, and plays at guard mounting and dress parade.

TRIPS OF INSPECTION.

At suitable times during the session trips of inspection, under the direction of some member of the teaching staff, are made to points of special interest. These trips have a high instructional value, and students of the upper classes are encouraged, though not required, to take them.

NON-RESIDENT LECTURERS.

At intervals throughout the session, men who have attained prominence in some branch of agriculture or engineering are invited to address the students with the view of enabling them to see more closely the relation between their college instruction and the work they will be called upon to do after they enter upon their professional careers.

AFFILIATED SCHOOLS.

Public schools of Texas may be affiliated with the College upon meeting the following conditions:

1. The school must be included in the list of schools designated by the State Department of Education as High Schools of the First Class.
2. The length of the session must be at least 36 weeks
3. The length of the recitation period must be at least 40 minutes.

Such schools are, without formality, considered as affiliated with the College.

Principals of private schools desiring affiliation with the College are invited to write to the Registrar for a form of affiliation.

Graduates of affiliated schools are admitted to the Freshman class at the beginning of the session without examination upon presentation of satisfactory certificates. The certificate must in each case show that the applicant has complied with the requirements as set forth under "Admission." The applicant will be credited with the number of entrance units to which his certificate shows him to be entitled.

BUILDINGS.

ACADEMIC BUILDING.

The Academic Building, completed in 1914, is located on the highest part of the Campus and occupies the site of the original Main Building, which was erected in 1876 and destroyed by fire May 27, 1912. It is 89 feet wide and 260 feet long and four stories high. It provides class and lecture rooms for the departments of architecture, drawing, economics, English, history, and mathematics, and quarters for the administrative offices, the library, and the armory; certain other departments have been assigned temporary quarters in this building. The building is constructed of brick and reinforced concrete, and is fireproof.

BERNARD SBISA HALL.

This is a one-story, fireproof building erected in 1912, to replace the Mess Hall destroyed by fire in October, 1911. The dining room has a seating capacity of over 1200, and the appointments of the building are modern in every respect.

Y. M. C. A. BUILDING.

The Y. M. C. A. building, completed in 1914, occupies one of the best locations on the Campus. It is the first structure encountered on the avenue from the main entrance. The building proper is "T" shaped in plan, 89 feet across the facade and 111 feet from front to rear. It is two stories high with the front part surrounded by a wide piazza that forms a portion of the basement story. A small café and kitchen, barber shop, bowling alleys, locker rooms, shower and swimming pool will occupy the basement space. The lobby, auditorium, and secretary's office occupy the first floor, and offices, class-rooms and secretary's living rooms the second floor. A third floor for residence purposes is yet to be added. The building is harmonious, architecturally, with the more recent College buildings, being a twentieth century adaptation of Renaissance *motifs.* Its auditorium is the most charming piece of work on the Campus. The erection of the Y. M. C. A. Building was made possible by the gifts of many friends of the College, supplemented by a large contribution from Mr. John D. Rockefeller.

MECHANICAL ENGINEERING BUILDING.

This building is situated north of the Academic Building and partly houses the Department of Mechanical Engineering. It consists of two distinct parts: First, the one containing the carpenter shop, and section rooms; second, that containing the blacksmith shop, machine shops, wood-turning room, and experimental laboratory. The first mentioned part is a two-story part, having the carpenter shop on the first floor and the other rooms on the second floor. The second part of the building is a one-story structure, containing the departmental equipment belonging to the work therein cared for; also an additional steam engine which furnishes the power for the shops.

AGRICULTURAL AND HORTICULTURAL BUILDING.

This building, erected in 1899, accommodates the agricultural and horticultural departments of the College by furnishing rooms for class instruction, laboratory investigations, museum purposes, butter and cheese making, pasteurizing milk, seed storeroom, photographic room, and the necessary offices for the accommodation of these departments. The building is 160 feet long and 77 feet wide, two stories high, and covered with slate. It contains twenty-seven rooms, fitted with apparatus and machinery for the instruction of students in the several branches of agriculture and horticulture.

CHEMICAL AND VETERINARY BUILDING.

This building, erected in 1902, is 138 feet long and 130 feet deep. It is built of brick and contains two stories and a basement. On the first floor the veterinary department has its office, veterinary laboratory, students' laboratory, dissecting room, operating room, museum, lecture room and apparatus room. The chemical department has on the same floor two storerooms, an assay room and a laboratory for State chemical work.

The second floor comprises the chemical and mineralogical museum, office and private laboratory of the professor of chemistry, two lecture rooms, balance room, two supply rooms and three laboratories for students.

VETERINARY HOSPITAL.

The Veterinary Hospital, erected in 1908, contains a clinic room, 36x36 feet, eight box stalls, four tie stalls, two rooms for dogs, a large colic stall, feed room, medicine room, janitor's room, etc. The building is floored with concrete, with traps from each stall to the sewer, thus permitting the proper isolation of contagious diseases and the thorough disinfection of each stall. An automatic flush tank serves to keep the building in a sanitary condition.

TEXTILE BUILDING.

This building, erected in 1904, is constructed of smooth red brick, according to the plans of an expert mill engineer, and is an excellent example of modern cotton mill construction. The construction is of the slow-burning type generally accepted by American engineers as the most satisfactory for cotton manufacturing.

The building is two stories high, 50 feet wide and 180 feet long. The first floor is occupied by the carding and spinning and warp-preparation machinery, and the professor's office. The second floor is occupied by the weaving and cloth-finishing machinery and by the designing and class-rooms, and the offices of the instructors in weaving.

The building is heated throughout by a Webster vacuum system of steam heat, and a complete sprinkling system for fire protection has been installed. The plumbing in the building is perfectly sanitary and typical of the best cotton mill practice.

CIVIL ENGINEERING BUILDING.

This building, erected in 1909, and used to house the departments of Civil Engineering and Physics, contains eight lecture rooms, five laboratories, five drawing rooms, and several offices and storerooms.

The building is 125 feet wide and 73 feet deep; it has a basement and three stories, is heated by steam and is fireproof.

ELECTRICAL ENGINEERING BUILDING.

This building, erected in 1912, and used to house the departments of Electrical Engineering and Mechanical Engineering, contains thirteen lecture rooms, four laboratories, two drawing rooms, and several offices and storerooms.

It has a basement and three stories; is 125 feet wide by 103 feet deep; is heated by hot water, and is fireproof.

EXPERIMENT STATION BUILDING.

This building, erected in 1909, contains offices, laboratories and storerooms for the officers of the Experiment Station.

The building is 115 feet wide and 61 feet deep; it has a basement and two stories, is heated by steam, and is fireproof.

GATHRIGHT HALL.

This building was erected in 1876, and is named in honor of Thomas L. Gathright, the first President of the College. It is being used temporarily for offices for the Extension Service, and for other purposes.

PFEUFFER HALL.

This is a dormitory, erected in 1887, and contains twenty-five rooms. It is named in honor of George Pfeuffer, a former President of the Board of Directors.

AUSTIN HALL.

This is a dormitory, erected in 1888, and contains twenty-five rooms. It is named in honor of Stephen F. Austin.

ROSS HALL.

This is a dormitory, erected in 1892, three stories high, with forty-one rooms. It is named in honor of former President L. S. Ross.

FOSTER HALL.

This building was erected in 1899, and is named in honor of former President L. L. Foster. It is a dormitory and consists of three separate parts; the central part is four stories high and contains nineteen rooms; the two ends are three stories high and contain eighteen rooms each.

GOODWIN HALL.

This dormitory was erected in 1908 and named in honor of Hon. G. I. Goodwin. It contains eighty-two rooms and is equipped with a steam heating system and modern toilet facilities.

MILNER HALL.

This building was erected in 1911 and named in honor of former President R. T. Milner. It is a dormitory containing one hundred and two rooms. The building is four stories high; there are no connecting stairways between the several floors, but each story has separate entrances so as to divide the building into four distinct parts, without interfering with the ventilation in any part of the building. Each story has four shower baths and ample toilet facilities. Every room is provided with water, electric light and hot water heat.

The building is constructed of reinforced concrete and brick, and is practically fireproof.

LEGETT HALL.

This building was erected in 1911 and is named in honor of K. K. Legett, a former President of the Board of Directors. It is a dormitory and in every respect a duplicate of Milner Hall.

HARVEY MITCHELL HALL.

This building was erected in 1912, and is named in honor of a former citizen of Bryan, who was largely instrumental in having the College located in Brazos county.

It is a dormitory, having a basement and three stories, and contains eighty-six rooms, each one having an outside exposure. Each story has shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick, and is practically fireproof.

ASSEMBLY HALL.

This is a two-story brick building, erected in 1889, having a main floor and gallery.

SEWERAGE SYSTEM.

The College is provided with a system of sewers, to which are connected the various dormitories, the academic building, the agricultural and horticultural hall, the steam plant, the infirmary, the mess hall, and the residences. The outfall of the system is three-fourths of a mile from the nearest College building and nine-tenths of a mile from the nearest recitation hall or dormitory.

FARM BUILDINGS.

The farm buildings of the College and Experiment Station are situated to the rear of the academic building, and consist of a farm implement building, a mule barn, a general farm barn, a large dairy barn with two silos, each of 200 tons capacity.

GROUNDS AND GARDEN.

The garden, orchard, barnyards and campus are included in the enclosure to the east of the railroad station. The campus consists of some twenty-five acres of lawn, shrubbery and flowers.

The orchard, vineyard, nursery and garden are located north and east of the academic building.

FARM.

The farm proper comprises about three hundred and fifty acres. The pastures contain in the neighborhood of one thousand acres, and furnish grazing for the College herds.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

Cherry, Thomas Graves........................... Giddings.
B. S., A. and M. College of Texas, 1915.
Candidate for the Degree of Master of Science.
Donoho, William Thompson........................... Utopia.
B. S., A. and M. College of Texas, 1913.
Candidate for the Degree of Civil Engineer.
Faber, Bennie Herman........................... Eagle Lake.
B. S., A. and M. College of Texas, 1915.
Candidate for the Degree of Civil Engineer.
Groginski, Philip........................... Bryan.
B. S., A. and M. College of Texas, 1914.
Candidate for the Degree of Electrical Engineer.
Herrington, John Anderson........................... Bryan.
B. S., A. and M. College of Mississippi, 1906.
Candidate for the Degree of Mechanical Engineer.
Jobson, Hicks Horatio........................... College Station.
B. S., A. and M. College of Texas, 1908.
Candidate for the Degree of Master of Science.
Langford, Ernest........................... College Station.
B. S., A. & M. College of Texas, 1913.
Candidate for the Degree of Civil Engineer.
Reed, Edward Looman........................... College Station.
B. A., Oklahoma Baptist College, 1912.
Candidate for the Degree of Master of Science.
Young, Roy Lester........................... Hallettsville.
B. S., A. & M. College of Texas, 1915.
Candidate for the Degree of Electrical Engineer.
Zuber, Neill Daniel........................... Bryan.
B. S., A. & M. College of Texas, 1915.
Candidate for the Degree of Master of Science.

UNDERGRADUATE STUDENTS.

Abbreviations.

Ag—Agriculture.
Ar—Architecture.
AE—Architectural Engineering.
ChE—Chemical Engineering.
CE—Civil Engineering.
EE—Electrical Engineering.
GE—General Engineering.
MeE—Mechanical Engineering.
MiE—Military Engineering.
Sci—Science.
TE—Textile Engineering.

c—Prescribed Two-Year Course in Agriculture.
d—Elective Two-Year Course in Agriculture.
e—Two-Year Course in Engineering.
f—Two-Year Course for Electricians.
g—Two-Year Course for Power Plant Operators.
h—Two-Year Course in Textile Engineering.

'16—Senior.
'17—Junior.
'18—Sophomore.
'19—Freshman.
Sp—Special Student.
1—First Year of the Two-Year Courses.
2—Second Year of the Two-Year Courses.

Abernathy, Fred Walter	'19 Ag	Fort Worth.
Abernathy, Milton Aubrey	'16 CE	Paducah.
Abicht, Ralph Rupert	'19 Ag	Sherman.

Abney, Will Hamilton	Sp Ag	Lampasas.
Adams, Clyde Akerly	'19 Ar	Oakland, Cal.
Adkisson, Albert Wesley	'19 CE	Denton.
Ainsworth, Herman Miller	1 d	Gonzales.
Akin, Earl T	'19 EE	Breckenridge.
Alderson, John Malcolm	1 d	Anson.
Alderson, Thomas Crittenton	'18 Ag	Katy.
Aldridge, Edwin Ernest	'16 MeE	Eagle Pass.
Alex, Alfred Herman	'18 Ag	Yorktown.
Alexander, Earl Lyles	Sp TE	Hillsboro.
Alexander, Irvin Jay	1 d	Cuero.
Alexander, William Richmond, Jr	'18 Ag	Navasota.
Allen, Edward Rudge	'17 Ag	Galveston.
Allen, John Spillman	'17 Ag	Palestine.
Allert, Carlos Carter	'17 EE	Cuero.
Allison, Elmer Curtis	'18 ChE	Ballinger.
Amsler, Hervey Meyer	'18 TE	Hempstead.
Anderson, Asa Scott	1 d	Alice.
Anderson, Farris Shelton	'18 Ag	Mineral Wells.
Anderson, George Dunlap	'18 CE	Dallas.
Anderson, Ivan Hood	1 c	Sutherland Springs.
Andrews, Dallas Robert	'17 Ag	Bryan.
Andrews, Earlie Clyde	2 c	Bryan.
Andrews, John Parke	Sp Ag	Haledon, N. J.
Appling, Grady Samuel	1 c	Louise.
Armstrong, Henry Ainsworth	'18 CE	Gainesville.
Armstrong, Walter Hamilton	'19 CE	Paterson, N. J.
Arnold, Albert Wendell	'19 Ag	Angleton.
Arnold, Leslie Julian	Sp Ag	Yoakum.
Arnold, Leon Laird	2 c	Vernon.
Arnold, Robert Benton	1 c	Vernon.
Askew, John Milton	1 c	Baileyville.
Ater, Guy	'18 EE	Bertram.
Atkinson, Donald Eustace	1 d	Winona.
August, Lester Holmes	'16 ChE	Luling.
Austin, James Lamar	2 f	Britton.
Avant, Homer Hogle	1 e	Tennessee Colony.
Avent, Benjamin Rhette	'17 CE	Lott.
Avera, Claude Bertram	1 d	Dickinson.
Ayres, Louis Corpening	'19 Ag	Bowie.

Babcock, Charles Latham	1 c	Galveston.
Baccus, Embury Depee	'16 EE	Seymour.
Bains, Whittaker Downman	1 d	Brookshire.
Baker, Dudley Evans	'18 CE	Crowley.
Baker, Otis Gordon	1 c	Edna.
Ballard, Thomas Leen	Sp Ag	Haskell.
Barbee, William Terry	'17 Ag	Hico.
Barlow, Thomas Jefferson	1 d	Eastland.
Barnes, James Renfro	'17 Ag	Chillicothe.
Barrow, Hunter Denson	1 d	Poteet.
Bartlett, George Clark	1 c	Dallas.
Barton, John Alexander	'17 Ag	Port Lavaca.
Bass, John Morton	1 c	Memphis.
Bates, Clyde Noble	'17 CE	El Campo.
Bates, Warren Wilder	'18 ChE	Beeville.
Baucom, John William	'19 EE	Italy.
Becker, Louis Charles	'19 Ag	Laredo.
Becker, Philip George	'18 Ag	Fort Worth.
Bennett, Adam Jackson	'17 EE	Nottawa.
Bennett, Joel Blackwell	'17 Ag	Hochheim.
Benson, Hardy Moulton	'18 Ag	Clarendon.
Beringer, Milton Streuer	'16 ChE	Gonzales.
Bernheim, Alphonse Gilbert	1 f	Galveston.
Berry, Jack	'17 Ag	Pearsall.
Berry, Joe Lees	Sp Ag	Hubbard.

Berry, Walter Earl	'18	MeE	Hubbard.
Bettis, Irvin Hunter	'19	MeE	Beaumont.
Beverley, George Hendricks	'19	Ag	Dalhart.
Beverly, Lee Allan	1	f	Crowell.
Beynon, Eugene Thomas	1	e	Corpus Christi.
Bigham, Eric Watt	'19	Ag	Rogers.
Biskamp, Ernest Joseph	1	e	Laredo.
Bittle, Guy Manville	'18	Ag	Bryan.
Bivins, June	'17	Ag	Longview.
Black, Robert Clyde	'17	CE	Skidmore.
Black, Temple	'19	MeE	Weatherford.
Blalock, Lewis Brown	'17	EE	Kosse.
Blankfield, Meyer	'16	EE	Galveston.
Blanton, John Franklin	'17	EE	Hewitt.
Blocker, Richard Lane	1	d	San Antonio.
Bloodworth, John Edward	'19	Ag	Clarksville.
Bludworth, Port	'19	Ag	Flatonia.
Blumberg, John Robert	1	d	Seguin.
Boatright, Charles Baxter	'18	Ag	Berryville, Ark.
Bodemuller, Herman Charles	1	f	Opelousas, La.
Boettcher, Carl	'19	Ag	Houston.
Bohning, Garrett William		Sp Ag	Fort Worth.
Bond, Otto Kurt	1	h	San Angelo.
Bone, Lewis Bernard	'18	CE	Dallas.
Boothe, William Henry, Jr		Sp Ag	Gonzales.
Boren, Clyde Milton	'19	EE	Snyder.
Born, Jacob	'18	AE	Corpus Christi.
Bosque, Robert Edward	'16	Ag	Corsicana.
Boyd, Charles Thomas	'18	Ag	Port Lavaca.
Boyd, Samuel Douglas		Sp Ag	Fannin.
Boyd, William Welder	'19	MeE	Port Lavaca.
Bozeman, Clifton Donaldson	'18	EE	Hamlin.
Braden, Clarence Camille	'18	CE	Jefferson.
Brady, Virgil Rue	'19	AE	Denton.
Brailsford, Thomas Leonard	'17	Ag	Latexo.
Brandt, Henry Christian	1	e	Wallis.
Brasher, Jack	1	f	Weimar.
Braumiller, Nickolaus Mathias	'16	MeE	Texarkana.
Braumiller, Walter Edwin	'16	Ag	Texarkana.
Braunig, Carl Francis	'17	Ag	Hallettsville.
Brecher, Edwin Robert	'17	Ag	San Antonio.
Breckenridge, Leland Davis	'19	CE	Fort Worth.
Brenner, Sam Solomon	'19	Ag	Kazatyn, Russia.
Brewer, Roy Allan	'18	Ag	Cleburne.
Bridgewater, Malcolm Macfarlan	'17	EE	Schulenburg.
Brigance, George	'16	CE	Pierce City, Mo.
Briggs, Robert Webb	'17	CE	New Orleans, La.
Bringhurst, Edmond Lesley	1	h	Houston.
Britton, John Woodson	1	h	Seymour.
Brooks, Edward Cottrell	'18	Ag	Bay City.
Brooks, Hugh	'17	Ag	Pasadena, Cal.
Brooks, Leland Elmore		Sp Ag	Wharton.
Brotherton, Robert Al	'18	Ag	Dallas.
Browder, Charles Marion	'17	CE	Groesbeck.
Brown, Edward Lee	'17	EE	Dallas.
Brown, James David	'16	Ar	Rockport.
Brown, Mitchell Harvey	'17	EE	Rockwall.
Brown, Newton Albert	1	c	Cuero.
Brown, Rodgers Porter	'17	MeE	Dallas.
Browne, James Duke	'18	CE	Luling.
Bruce, Andrew Davis	'16	Ag	San Antonio.
Brunnemann, Frank Cadwell	'18	Ag	Flatonia.
Bryan, Lester Leon	'17	CE	Glen Rose.
Bryant, Robert Fender	1	e	Mesquite.
Buchanan, Durant Samuel	'17	Ag	Bryan.
Bull, Alfred Castleman	'16	Ag	Austin.

Bull, Richard Platt	'19 Ag	Austin.
Burkett, Fred	'16 CE	Fort Worth.
Burkett, Harry J	'17 Ag	Galveston.
Burkett, James Marion	'17 Ar	Graham.
Burleson, Rufus C	'19 CE	Waco.
Burns, Douglas	'16 Ag	Cuero.
Burns, Darnce Bernard	'18 CE	Bowie.
Burns, Lincoln Riley	'19 Ag	Seymour.
Burton, Joseph	Sp Ag	Clarendon.
Byrom, Travis Carroll	Sp Ag	Sue.

Cade, Albert Whitney	'19 CE	Chandler.
Camp, Robert Shaw	'17 Ag	Navasota.
Camp, Thomas Ringgold	'16 AE	San Antonio.
Campbell, Burgess	Sp ME	Holliday.
Carleton, Howard Cantrell	'16 Ag	Dallas.
Carmichael, Clarence	1 g	Nocona.
Carmichael, Ray	'19 ChE	Saint Jo.
Carnahan, Lester Holman	'18 Ag	Pine Bluff, Ark.
Carpenter, Oscar Lee	1 d	Corsicana.
Carper, Marion Edmond	1 c	Rio Vista.
Carson, Alfred Doughton	'17 Ag	Bryan.
Cartwright, Emmit Bea	'17 Ag	Sherman.
Casey, Alfred Cecil	'16 Ag	Rogers.
Cash, Reuben Mott	'19 MeE	Galveston.
Cassity, Jack Holland	'19 Sci	San Antonio.
Casstevens, Graham Leroy	'19 Ag	Alvarado.
Cather, Harold Malcolm	'17 MeE	Waco.
Cawthon, Kirby Henry	1 c	Houston.
Champion, Drue Andrue	1 c	Ennis.
Chandler, Jamie Jordan	1 e	Ardmore, Okla.
Chappelle, Hugh Lyman	'18 Ag	College Station.
Chappelle, Roy L	'17 Ag	College Station.
Childers, Reddin Raymond	1 d	Jasper.
Chilton, Louis Warren	1 d	Goliad.
Clark, Carl Francis	'19 Ag	San Angelo.
Clark, Charles Harrison	'19 Ag	Hico.
Clarke, Hugh St. Clair	'16 MeE	Comanche.
Clarkson, Frank Tillman	1 c	Chicago, Ill.
Clary, Russell Wray	1 c	Milano.
Clayton, Henry Malone	'19 EE	Waco.
Cockran, Thomas Beauford	'17 Ag	Austin.
Cockrell, James Bass	'17 Ag	Terrell.
Cockrell, Silver Gray	Sp Ag	Dallas.
Cocreham, Guy Combs	'19 CE	Luling.
Coffin, Sylvester Frigell	1 d	Mathis.
Cole, Ransom James	'16 Ag	Bryan.
Coleman, Frank Ralph	'16 EE	Hallettsville.
Coleman, Wiley Lee	'17 MeE	Fort Worth.
Collier, Homer Eugene	1 c	Waco.
Collins, Henry Warren	'19 CE	Austin.
Collins, Willie Atmar	'16 Ag	Groveton.
Colquitt, Will Kellam	Sp Ag	Marfa.
Colvin, Cicero Houston	'19 Sci	Duffau.
Comer, John Garrison	'19 Ag	Liberty Hill.
Cone, James Cecil	2 c	Llano.
Connell, William Nathan	Sp Ag	Midland.
Connor, James Augustus	'16 Ag	Lexington.
Connor, Robert Eldridge	Sp Ag	Lexington.
Connor, Rivers Sidney	'19 Ag	Lexington.
Conover, Mack Dewey	1 e	Moore.
Conrads, Herbert Arthur	1 f	Karnes City.
Conway, Myron Joseph	'16 Ag	Mission.
Cook, William Berry	'17 Ag	Bryan.
Cook, Wilbur Owen	2 f	Sealy.
Cooper, F. A	'18 EE	Jefferson.

Cooper, Joe Floyd	1 f	Britton.
Copeland, Clinton Marion	'18 EE	Graham.
Copeland, James Sharp	2 f	Rogers.
Copeland, Powell Lane	1 f	Temple.
Cornett, Guy Joris	'16 CE	Grandview.
Corry, Hal Francis	'17 EE	Rockwall.
Cothran, Andrew Barto	2 c	Wellborn.
Courtney, Seigel Langston	1 d	Pettus.
Cowart, Ernest L	1 d	San Antonio.
Cowden, Thomas Leck	Sp Ag	Abilene.
Cox, Carl Clarence	'17 EE	Mt. Vernon.
Craig, Samuel Reid	'17 CE	El Campo.
Crawford, Charles William	'19 MeE	Bryan.
Crawford, Robert Daniel	'18 Ag	Grand Prairie.
Crawford, Vernon William	'16 Ag	Menard.
Crocker, Norman G	'18 Ag	Center.
Crocker, William Jennings, Jr	'16 EE	Dallas.
Cronk, Frank Lewis	'19 EE	Waxahachie.
Crow, Floyd Arnold	'17 Ag	Waco.
Culver, Albert Lee	'19 MeE	Lampasas.
Curnutte, James Vincell	'16 CE	Snyder.
Curtis, Manson Franklin	1 d	Rogers.
Curtis, Wyman Broun	'17 Ag	Lake Village, Ark.

Dahme, Leslie	1 f	Cuero.
Daly, Ruland Henry	1 g	Skidmore.
Dansby, Noah W	'19 CE	Bryan.
Darby, James Andrew	'17 EE	San Antonio.
Daugherty, Martin Marion	'16 Ag	Alpine.
Davidson, Caven Johnston	1 f	Moore.
Davis, George Marion	'19 Ag	Milford.
Davis, John William, Jr	1 c	Mesquite.
Davis, Samuel Howard	'19 MeE	Tucson, Arizona.
Davis, Thomas Jefferson	'18 Ag	Leonard.
Davis, William Kinnard	'16 EE	Hico.
Deam, Andrew Taylor	1 c	Lancaster.
Deason, Harley Knox	1 d	Bryan.
Deats, Lawrence Elmer	2 g	Dickinson.
Denison, Jim Swayne	'19 MeE	Temple.
Denning Charles Oscar	'17 MeE	Mexia.
Dennis, Leon Chapman	'16 Ag	Prince Bay, N. Y.
Deputy, Ona Delos	'17 Ag	Dallas.
Derrick, William Wesley	'19 Ag	Thorp Spring.
Dick, Walter Gresham	2 c	Columbus.
Dickens, Sam, Jr	'18 MeE	Lampasas.
Dickie, Alexander	'16 EE	Breckenridge.
Dickie, George Dewey	'19 EE	Woodson.
Dietert, William Edward	'19 EE	Kerrville.
Dillon, Lester Reed	1 g	Happy.
Ditto, Ernest Carlisle	'19 Ag	McKinney.
Doak, Clifton C	'19 Ag	Snyder.
Doak, Robert Ashburn	1 e	Pittsburg.
Dodd, Grover Cleveland	'17 Ag	Rosalie.
Dodd, Harold Thomas	1 c	Langtry.
Dodson, James Samuel, Jr	2 c	Fort Worth.
Dodson, Quaite	Sp Ag	Hubbard.
Dolan, Joseph Francis	'19 Ag	San Antonio.
Dollens, Edward Williams	1 g	Willis.
Doney, Louden Charles, Jr	'18 Ag	Corpus Christi.
Donnell, Julius Portewayne	1 c	Cleburne.
Doss, William Henry	1 d	Stacy.
Douthit, Leland Emory	1 g	Dallas.
Downing, James Solon	2 c	Wichita Falls.
Dudley, Edison Becton	'18 Ag	Plano.
Duke, John William	'18 MeE	Pearsall.
Dunkle, Paul Burtch	'16 Ag	Lelia Lake.

Dunkle, Ralph Owen	1 c	Lelia Lake.
Dyer, Scott Bruce	'17 EE	Tulia.

Easley, Claudius Miller	'16 AE	Waco.
Earnest, Lawrence Howell	'16 CE	Laredo.
Eckhardt, Carl Kleburg	'19 Ag	Webster.
Eckhardt, Clarence Kent	1 c	Webster.
Eddleman, Herschel Glen	'19 Ag	Graham.
Edgar, Henry Benbow	'19 EE	Cuero.
Edmonds, Lester Loyd	1 f	Alice.
Edwards, Arthur Irwin	1 d	Millican.
Egger, Harmon Wilson	'19 MeE	Terrell.
Ehlert, John Frederick	'16 Ag	Brenham.
Elam, Emmett Otis	1 c	Ireland.
Elam, William Nile	'17 Ag	Ohio.
Eldridge, Herbert	'17 CE	Pineland.
Elliott, King Fount	'19 Ag	Corsicana.
Elliott, Robert Drane	'17 EE	Corsicana.
Ellis, Joe F	1 e	Lockhart.
Ellison, Dee Truitt	'19 CE	Rosenberg.
Engle, Laird Frierson	1 d	Beeville.
Ervin, John Guy	'18 Ag	Green Valley, Va.
Eschenburg, Arthur Carl	'16 Ag	Floresville.
Eschenburg, Herbert Walter	1 e	Floresville.
Evans, Coxey	'18 CE	Crowley.
Ewen, John William	'19 Ag	Memphis.

Fabian, Carl Mann	'19 EE	Dallas.
Fahey, Martin Joseph	'18 Ag	Navasota.
Faires, Lee Killough	2 c	Flatonia.
Fannin, Robert Degraffinreed	1 e	Thomas.
Farrell, Ed Sam	Sp Ag	Monticello, Ark.
Farthing, Welbourne Owen	'17 Ag	Valley View.
Fenner, William Bell	1 c	Cordele.
Fenske, Hermann Walter	1 d	New Braunfels.
Findlater, John Corscaden	'17 EE	San Angelo.
Fitzwilliam, Edwin Dennis	1 c	Bastrop.
Flach, Ernest Kapp	'17 Ag	Comfort.
Fleming, Charles Herman	'17 Ag	Merit.
Foley, Roland	'19 MeE	Denison.
Ford, Marvin Harrison	'18 Ag	Navasota.
Forsyth, George Alexander	'17 MeE	McKinney.
Forsyth, William Russell	'16 MeE	McKinney.
Foster, Clayton Jones	'16 Ag	Denton.
Foster, Hubert Gilson	2 c	Calvert.
Foster, Joseph Holt	1 d	Fort Worth.
Foster, Julian Lewis	'16 EE	Fort Worth.
Foster, Wilbur Carradine	'17 Ag	Opelousas, La.
Foster, William Rush	1 d	Riesel.
Francis, James Wallace, Jr	'19 Ag	Calvert.
Francks, Church Barry	'18 Ag	Marlin.
Franklin, Isaac Nelson	1 d	Beeville.
Freeman, Clifford	'18 Ag	Medina.
Friend, Horace Burns	2 e	Ozona.
Frnka, Bruno	1 g	New Ulm.
Fry, Homer Lee	Sp Ag	Denton.
Fuchs, John William	'17 EE	Round Rock.
Fuess, Carl Andrew	'16 AE	Cuero.
Futch, Edward Downing, Jr	'19 EE	Ballinger.

Gaedcke, Gilbert Dueh	'19 CE	Houston.
Gainer, Charles S	Sp Ag	Bryan.
Galliford, Walter Thomas	'17 MeE	Galveston.
Gardner, James Eldridge	'19 CE	Waco.
Garitty, John Patterson	Sp TE	Corsicana.
Garner, Charles William	1 g	Dickinson.

Garrett, Melrose Truett	'16 Ag	Merrimac.
Garza, James Leonard	2 h	San Antonio.
Gibb, Richard Russell	1 c	Corpus Christi.
Gibbins, Joseph David	1 c	Center Point.
Gibbs, John Lawson	'17 MeE	Burnet.
Gibson, Manly Broadus	'17 Ag	Aberdeen, Washington.
Giesecke, Edward	'19 Sci	Ballinger.
Gilbert, George Wren	1 f	Corsicana.
Gilfillan, Max Dole	'17 Ag	St. Johnsbury, Vt.
Gill, Hugh	Sp Ag	Houston.
Gillaspie, James W	1 d	Houston.
Gillespie, Roe Eugene	'19 EE	Lorena.
Gilliam, Frederick Lewis	'18 ChE	Tyler.
Gilliam, Thomas James	1 d	Hondo.
Givens, Ben Mathew	'19 Ag	Dallas.
Givens, George Thomas	'18 CE	Dallas.
Glaze, Wesley Ogden	'17 EE	San Antonio.
Glenn, Vernon Bryan	'19 Ag	Lufkin.
Goen, Preston Soles	1 c	Bryan.
Gohlke, Arnold Otto	1 c	Cuero.
Goldbeck, Eric Albert	Sp Sci	Smithville.
Goodman, Robert Blair	Sp Ag	Corsicana.
Gorman, Edwin Mobley	1 d	Oakwood.
Grace, Joe William	'18 CE	Spur.
Graham, Cyrus Earle	'16 Ag	Bryan.
Graham, Lane C	1 g	McGregor.
Graham, Mack Charles	1 g	McGregor.
Graham, Paul Samuel	1 f	Winters.
Graves, Marshall Pulliam	1 d	Melissa.
Gray, Oscar Somers	'16 Ag	Terrell.
Greathouse, Thaddeus Allen	'18 Ag	Austin.
Green, Frank Lester	'19 CE	Bowie.
Griesenbeck, Carlos Philip Timothy	'18 Ag	San Antonio.
Griffin, Joseph Hadyn	2 c	Myra.
Griggs, Robert Moore	1 h	El Campo.
Grissom, Roland Lionel	'17 EE	Houston.
Gross, Miner Putnum	'19 CE	Saginaw.
Grun, Charles August	1 e	Yorktown.
Gunn, Clifton Henry	'16 Ag	Waelder.
Haas, Julius Karl	'18 Ag	Brighton.
Haden, Julian Frank	'16 Ar	Timpson.
Hafner, Vernon Etter	'17 Ag	Greenville.
Hagaman, Leslie Hilsman	'16 CE	Ranger.
Hagen, Julius Allen	'19 EE	Yoakum.
Haines, Paul Graves	'17 Ag	Gatesville.
Halbedl, Clifton Charles	'17 Ag	San Antonio.
Hall, Robert Alison	'16 Ag	Tarkington Prairie.
Hall, Walter Henry	'19 MeE	Wichita Falls.
Halsey, Frank Wilbur	'17 Ag	East Hampton, N. Y.
Hamer, Robert Colt	1 d	Roff, Okla.
Hames, Quincy Lelon	1 c	Crosbyton.
Hamilton, Mark Armstrong	'18 ChE	Tyler.
Hamilton, William McMurray	Sp Ag	San Antonio.
Hamner, Edward Joe, Jr	'17 Ag	Sweetwater.
Hamon, Edwin Raymond	1 f	Weatherford.
Hampton, Manton Milton	1 c	Waxahachie.
Hancock, Carl Elmo	'19 MeE	Cooledge.
Hancock, Percy	'19 ChE	Dallas.
Hanson, Gordon Bell	'17 EE	Tyler.
Hanson, Wrathall King	'16 Ag	San Antonio.
Hanway, John Thomas, Jr	'17 TE	Bryan.
Hardwicke, John Benjamin	'19 Ag	Corpus Christi.
Harrell, William Marion Yater	'19 EE	Grandview.
Harrington, Silas Liter	1 d	Plano.
Harris, Eugene Elliott	'19 AE	Nevada.

Harris, Stephen Walter	1 c	Timpson.
Harris, Thomas Wayne	Sp Ag	San Angelo.
Harvin, Charles Miller	'18 Ag	Sutherland Springs.
Hasie, Coleman L	'19 CE	Dallas.
Hatley, Joe Deutz	'19 Ag	Galveston.
Hatley, Walter George	'18 MeE	Galveston.
Hausser, Charles	'16 Ag	Eagle Pass.
Hawes, Roscoe	'16 CE	San Antonio.
Hawkins, Alden Riley	'16 AE	Dallas.
Hayes, Monard Vinson	Sp MeE	Deport.
Haynes, Sylvan Blum	'16 Ar	Port Arthur.
Head, Alvin Elliott	1 f	Oakhurst.
Head, Earl Churchel	1 d	Oakhurst.
Heard, Cecil Emory	'19 Ag	Stoneham.
Heder, Louis Argyle	1 c	San Antonio.
Heep, Herman	1 d	Buda.
Hefner, Charles Balser	'16 EE	Cuero.
Heisig, Hathorne Fergus	'19 Sci	Beaumont.
Heldenfels, Grover Cleveland	'16 Ag	Beeville.
Helm, Dury Lane	'16 Ag	Clifton.
Hendrix, Joseph Bailey	1 c	Quanah.
Henry, Grady Wallace	1 f	Aransas Pass.
Henry, Julian Lemonde	'16 Ag	Lancaster.
Hensarling, Abram	'18 Ag	Wellborn.
Herold, Jaro Vaclav	'19 Ag	Corpus Christi.
Hervey, Stewart Darden	'17 Ag	Galveston.
Hickerson, Robert Clarence	'19 EE	Crawford.
Hicks, Clinton Ellis	'19 EE	Bellevue.
Hicks, Jesse William	'17 Ag	Canyon.
Hilbun, Lynn	1 e	Roby.
Hill, Horace Bismarck	1 e	Weimar.
Hill, Martin Elmo	'16 Ag	Eastland.
Hill, Richard Augustus	1 e	Austin.
Hill, Ralph Edwin	'17 EE	El Campo.
Hines, Fred Austin	'19 Ag	Coleman.
Hintz, Richard Wilhelm	'19 Ag	Sealy.
Hobbs, Leonard Sinclair	'16 MeE	Brownsville.
Hockaday, Frederick James	'18 Ag	Madill, Okla.
Hockaday, Irving Thomas	'17 EE	Madill, Okla.
Hollingshead, Frank Adolphus	'16 ChE	Ganado.
Holmes, Neill Shaw	'17 Ag	Fayetteville, N. C.
Hood, Hodge Ray	1 c	Gainesville.
Hook, Donnie Leon	'17 CE	Denison.
Hooper, Dwight Winship	'18 CE	Marble Falls.
Hopkins, Edward Desmond	'19 CE	San Marcos.
Hopkins, John Philip	1 f	San Antonio.
Hoppe, Roland Charles	'18 MeE	Cypress Mills.
Horn, Jeffie Neal	'17 Ag	Athens.
Howard, Clifton Earl	1 e	Rosebud.
Howard, John Westley Griffin	1 e	Flora, Miss.
Howell, Douglas Wister	'19 Sci	Bryan.
Hubbard, Edmund Paul	'17 EE	Lampasas.
Hudgins, John LaFayette	'18 Ag	Houston.
Hudson, Gay	'16 Ag	Celeste.
Huebner, Louis Henry Alfred	'17 Ar	Shiner.
Hughes, John Dimmitt	Sp Ag	Georgetown.
Hull, Joseph Henry	'18 Ag	Carthage.
Hume, William Joseph	'19 CE	Houston.
Humphreville, George Dewey	'19 MeE	Houston.
Hunt, Walter Harold	1 d	Bowie.
Hunter, Archie D	'19 EE	Santa Anna.
Hurt, Sam Fuqua	'18 Ag	Austin.
Hutchings, Sealy, Jr	1 e	Galveston.
Irby, Benjamin Earle	'17 Ar	Beaumont.

Jackson, William Leonard	1 f	Iolanthe.
Jackson, Willie Wood	'18 Ag	Liberty Hill.
Jacobson, Hilmar Herman	'19 EE	New Braunfels.
Jahn, Erich Julius	1 c	San Antonio.
Jalufka, Jerome William	2 g	Schulenburg.
James, Ashby Minor	'19 Ag	Austin.
James, James Ray	'17 EE	Hamlin.
Jameson, Jackson Hart	'18 Ag	Kosse.
Japhet, Dan Eric	2 h	Houston.
Jarrell, Arvel Archie	1 c	Coleman.
Jarrell, Jack Marlin	1 c	Belton.
Jarrett, Ed Lee	'16 EE	Valley Mills.
Jenkins, Joe Alphaeus	'17 Ag	Caldwell.
Jennings, Edgar Petty	'16 Ag	Martindale.
Jennings, Robert Quincy	'17 Ag	Martindale.
Jobson, Charlie Culberson	'18 Ag	Mesquite.
Johnson, Albert Denarvous	'16 Ag	Sulphur Springs.
Johnson, Edwin	'19 Ar	Waco.
Johnson, Olaf Konstantine	'17 Ar	Waco.
Johnson, Thomas Elmer	2 c	Floresville.
Johnson, Walter Theodore	'19 Ag	Galveston.
Jonas, Henry Fulton	'19 CE	Houston.
Jones, Cecil Charly	2 c	Gainesville.
Jones, John Ed	Sp Ag	Temple.
Jones, Roy Colster	Sp Ag	Myra.
Jones, Wilbourne Ocil	'19 CE	Fort Worth.
Jopling, Homer Augustus	'16 Ar	Wharton.
Joyce, John Berry	'17 EE	Brady.
Judd, Frank Wallace	'17 Ag	Fort Worth.
Kane, Joseph John	'18 MeE	Galveston.
Keasler, Morris Lelan	'19 Ag	Hughes Springs.
Keasler, Thomas Frank	'16 Ag	Hughes Springs.
Keenan, Lewis Champlin	'19 MeE	Galveston.
Keller, Reuben Willard	'19 ChE	Shawnee, Okla.
Kelly, Charles Frederick	1 f	League City.
Kelly, David Cleveland	'16 ChE	Greenville.
Kelly, Thomas James	'18 CE	Beaumont.
Kenan, Wilder	'18 CE	Seymour.
Kendrick, Burrell Meredith	'18 Ag	Waco.
Kendrick, James Marcellus	'17 Ag	Waco.
Kennard, Hartwell Jones	'18 Ag	Gonzales.
Kennedy, Eugene	1 g	Tyler.
Kerbow, Herbert Ralph	'16 Ar	Clarendon.
Kiber, Daniel Henry	'17 Ag	Corsicana.
Killough, Hugh Baxter	'16 Ag	Center Point.
Kimbell, Agee	'18 TE	Ennis.
Kimbrough, William Paul	1 c	Bells.
King, George Leonard	2 c	Seguin.
Kingswell, John William	'18 Ag	Angleton.
Kirkland, Kenneth Lester	'19 Ag	Cleburne.
Knickerbocker, Harry Clayton	'18 CE	Temple.
Knolle, Byron Frank	'18 CE	Ellinger.
Koerth, Charles John	'17 Ag	Brady.
Kokernot, Robert Lusk	1 c	Gonzales.
Kolar, Louis Leo	1 c	Flatonia.
Kotzebue, Leon Lightner	'17 Ag	Flatonia.
Kristek, George Henry	'16 EE	Flatonia.
Kubena, Jerome John	1 e	Fayetteville.
Kuhne, Cecil Crawford	'19 EE	Runge.
Kuhne, Clarence Henry	'19 Ar	Runge.
Kunz, August George	1 g	Cameron.
Kurtz, Lawrence Archite	'17 EE	Seadrift.
Landa, Maynard Ivan	'19 EE	Eagle Lake.
Landers, Jesse Culberson	'17 Ag	Cleburne.

Landers, John Davison	1 c	Cleburne.
Landrum, Joseph H	'19 MiE	Hereford.
Langford, Ivan	'17 EE	Georgetown.
Lanier, Guy Vernon	1 c	Marquez.
Lanmon, Carlyle Maurice	'19 EE	Conroe.
Lattimore, Robert Baker	1 d	Fort Worth.
Lavinder, Herbert F	1 d	Bryan.
Lawhon, Guy Bryan	2 f	Boerne.
Lawrence, John Michael, Jr	'19 Ag	Bryan.
Lawrence, Walter Hayden	'18 Ag	Cameron.
Lawson, Thomas Archie	'19 Ag	Detroit.
Leary, John Benjamin Rex	'18 Ag	San Antonio.
Lee, Roy Diggs	1 f	Temple.
Leffel, Robert Carr	'18 Ag	San Angelo.
Leidolf, Emil J	'19 EE	Weimar.
Lemond, Alvia Benjamin	'19 EE	Alice.
Leverett, Frank Marshall	1 e	Kilgore.
Lewis, Cleon Summers	1 d	Forney.
Lindemann, Le Roy	'19 Sci	Bartlett.
Lindsey, Roy Henry	1 d	Houston.
Lipscomb, Thomas Garland	'18 EE	Saron.
Litterest, Frank Carl	1 h	Houston.
Livingston, Elmo Clarence	'19 ChE	Coleman.
Livingston, William Edwin	'19 Ag	Fort Worth.
Lochridge, Robert Napoleon	Sp Ag	Iowa Park.
Lockett, William Cureton	'17 EE	Cleburne.
Loftus, Luke Witt	'18 CE	Dolores.
Logan, William Oma	1 d	Winnsboro.
Lohoefener, Alvin Henry	1 f	Burkburnett.
Long, George Alvin	'17 Ag	Greenville.
Long, Robert Newton	1 d	Pearsall.
Looney, Benjamin Franklin	'18 Ag	Austin.
Lowe, Harold Mathis	'17 MeE	Oakes, N. D.
Lowman, Quincy	1 g	Staples.
Lowry, Richard Cohron	'17 EE	San Antonio.
Luker, John Will	2 c	Proctor.
Lusby, Herbert Preston	2 c	Santa Barbara, Cal.
Lyle, Francis Marion	'17 Ag	Quinlan.
Lynch, Joe Wilson	1 f	Godley.
Lyne, Eugene Scott	'17 MeE	Houston.

McAshan, Raymond Henry	2 c	Houston.
McClure, Clarence Samuel	'19 EE	Dallas.
McCollum, Lorance Leslie	1 c	Smithville.
McCoy, Lloyd	1 c	Stockdale.
McDaniel, George Edward, Jr	'17 CE	Mertens.
McElvany, Malcolm Watkins	'19 EE	Mansfield.
McElwrath, Frank Pierce	1 d	Oakwood.
McEnroe, Patrick John	1 f	Diboll.
McFadden, Samuel Poole	'16 EE	San Antonio.
MacFadden, Willford	'18 Ag	San Antonio.
McFarland, Hugh	'17 Ag	Brownwood.
McGilberry, Alton Earl	'16 Ag	Shiro.
McGregor, Joel Ira	'16 Ag	Millican.
McIver, James Dalrymple	'16 Ag	Lexington.
McKean, Elmo Byron	1 c	Prairie Lea.
McKimmey, John Clyde	'18 Ag	Gustine.
McKinney, Norace Percie	'19 EE	Mt. Calm.
McKnight, John Banning	'18 Ag	Carlsbad.
McLamore, Roy Travis	'19 Ag	Garrison.
McLean, Archie Reynolds	'18 EE	Orange.
McMillan, Roy Dillard	'17 Ag	College Station.
McMurrey, John Dunlap	Sp Ag	Cuero.
McNew, John Thomas Lamar	'18 CE	Mineral Wells.
McOsker, William Paul	'19 ChE	Amarillo.

Macgregor, Karl Alois	1 d	O'Brien.
Madison, Ford Aurelius	'19 EE	Amarillo.
Malloy, Henry Platter	'16 Ag	Palestine.
Mann, George Cullee	'19 Ag	Laredo.
Mann, John Adam	'18 Ag	Dallas.
Manning, Llewellyn Rigsby	'18 TE	Calvert.
Mansker, William Pierce	'17 MeE	Moody.
Marston, Noble Marcus	1 e	Columbus.
Martin, Anderson Marion	Sp EE	Waco.
Martin, Brassel	1 f	Smiley.
Martin, Charlie Brady	'16 Ag	Bryan.
Martin, Dick Albert	1 e	Dallas.
Martin, Daugherty Exline	'17 CE	Waxahachie.
Martin, Everett Clifton	'18 Ag	Bryan.
Martin, George Lee	1 c	Mineral Wells.
Martin, Jay Wilfred	'19 Ag	San Antonio.
Martin, Olin Madison	'19 CE	Venus.
Martin, Sam Winford	'17 Ag	Morgan.
Martin, Travis Elwood	'18 EE	Venus.
Masters, Horace Grover	1 d	Celeste.
Mathews, Sam Lodge	1 d	Coleman.
Matthews, Walter Gilbert	'19 EE	Uvalde.
Mattox, Jesse Kuykendall	'17 EE	Greenville.
Mauldin, Edward	'17 EE	Lancaster.
Maxwell, Ernest Raymond	1 d	Wayland.
Maxwell, William Wortham	'18 Ag	Austin.
Melton, Joseph Henderson	'18 Ag	Leonard.
Menn, Hubert Leopoldt	'17 Ag	Yorktown.
Meriwether, Gay Clifford	'16 EE	Tampico, Mexico.
Merrell, Robert Erroll	'19 AE	Keller.
Messenger, Frank	Sp Ag	Paterson, N. J.
Metcalfe, Penrose Blakely	'16 Ag	San Angelo.
Metcalfe, Samuel Little	'17 Ag	Pearsall.
Meyer, James Victor	'16 Ag	Flatonia.
Middleton, Willie Green	1 d	Hillsboro.
Miley, Sidney Hill	'19 Ag	Bastrop.
Miller, Alden Deloss	'18 EE	Denton.
Miller, Garland Burleigh, Jr	1 e	Bastrop.
Miller, Herman Edward	'16 Ag	Bellville.
Miller, Jennings Bryan	'18 EE	Ladonia.
Milner, Drinkard Blacknall	'17 Ar	Henderson.
Milner, Robert Teague, Jr	Sp Ag	Henderson.
Minier, George Rider	'17 Ag	Waco.
Minnick, Joe Edward	'19 Ag	Gainesville.
Mistrot, Robert Benson	'19 MeE	Houston.
Mitchell, Merlin	'17 Ag	Gainesville.
Mitchell, Sidney Foster	1 d	Houston.
Moffett, George Clarence	'16 Ag	Chillicothe.
Mogford, Fritz William	'18 Ag	London.
Mogford, Joseph Sayers	'16 Ag	London.
Molloy, Robert Gerald	1 d	Corsicana.
Monkhouse, Joe Robert	1 c	Hondo.
de Montel, Elbert Alexander	1 e	Hondo.
de Montel, Emmett Joseph	'18 EE	Hondo.
Montgomery, Roark	'17 Ag	Corsicana.
Moore, Clarence Henderson	'19 EE	Rogers.
Moore, Dudley Spencer	'18 Ag	Lampasas.
Moore, Howard Ernest	1 f	Agua Dulce.
Moore, Isaac George	'17 TE	Hubbard.
Moore, Lewis Blaffer	'19 CE	Balboa Heights, Canal Zone, Panama.
Moore, Leonard Willis	1 c	Fort Worth.
Moore, Paul Abbott	1 e	Runge.
Moore, William Morton	1 d	San Saba.
Moreland, Banks George	'16 ChE	Fort Worth.
Morgan, George Bason	'17 CE	Greenville.

Morgan, Robert Blane	1 d	Colorado.
Morgenstern, Louis W	1 d	Houston.
Morris, Carl McDonald	1 c	Buckholts.
Morris, George Cooper	'18 EE	Dallas.
Morris, Thomas Kyle	'16 Ag	Valley Mills.
Morrison, John Faris	1 h	Coleman.
Moseley, Ewing S	'19 MiE	Dallas.
Moses, Andrew	'16 Ag	Rogers.
Moses, Harry Bowman	'18 ChE	Burnet.
Moses, Robert Lewis	'18 Ag	Rogers.
Moss, Luther Dines	1 d	Godley.
Muller, Albert Furney	1 d	Laredo.
Munsch, Cornelius Aloysius	1 c	Rosebud.
Murphrey, Clarence Jennings	1 c	Seagoville.
Murphy, William Michael	'16 ChE	Quanah.
Murrah, Frank Volney	'19 EE	Plano.
Murray, Frederick Alexander	1 d	College Station.
Myers, Harry S	'18 Ag	Jolly.

Nagle, Edgar Thomas	'18 Ag	Manor.
Nail, Ben Miles	'17 Ag	Crawford.
Nash, Elmer C	'18 Ag	Cheneyville, La.
Nash, Robert Fletcher	'18 EE	Crystal City.
Neal, Paul LaRue	'19 EE	DeLeon.
Newman, Lewis	'17 Ag	Matador.
Newton, Charles Calvin	Sp Ag	Gainesville.
Neyland, Orlando Lawrence	'18 Ag	Brady.
Nichols, Clay	1 d	Luling.
Nichols, Rowland Virgill	2 c	Kerrville.
Nisbet, Walker Rober	'16 Ag	San Angelo.
Nolte, Howell	'18 EE	San Angelo.
Nunn, Rowland Chatham	1 c	Bryan.
Nussbaum, Claude Albert	'18 Ag	Mexia.
Nussbaum, Roy	'19 EE	Groesbeck.

Oates, Orville Henslee	1 d	Waco.
Oberthier, Fred Holmsley	'17 Ag	Hereford.
O'Brien, Floyd	'16 EE	San Antonio.
O'Conor, Robert	'16 Ag	Laredo.
Oliver, Amory	'18 EE	Lampasas.
Oliver, Lane Ellsbury	1 g	Moore.
Olson, Oscar Rudolph	'16 MeE	Galveston.
Olson, Palmer Henry	'16 CE	Clifton.
Otto, John August	'16 Ag	Ottine.
Owen, Arthur George	'16 CE	Double Bayou.
Ownby, Clifford William	1 d	Merit.

Palmer, Sims Allen	1 d	Dunn.
Parke, Morton Leon	1 e	Dickinson.
Parks, Lois Cleo	1 c	Ennis.
Parmley, Jess C	'19 Ag	Nacogdoches.
Parrott, Albert Ruel	'19 Ag	Garrison.
Pate, James Elmer	1 c	Bryan.
Patterson, Edwin Bridgers	'16 EE	Goodnight.
Peace, Hugh	1 e	Batesville.
Pedigo, Maxie Smith	'16 Ag	Valley Mills.
Peeples, Lon Myrick	1 c	Milano.
Pegues, Perry Percell	1 c	Cotulla.
Pereira, Clodoaldo Guedes	'18 MeE	Parahyba do Norte, Brazil.
Perkins, Henry Clay	1 c	Nacogdoches.
Perkins, Paul Richard	'16 Ag	Nacogdoches.
Perrin, Arthur Charles	'17 MeE	Boerne.
Perrin, Stanley Ezra	'17 Ag	Boerne.
Peteet, George Walton	'19 Sci	College Station.
Peters, Noah Linton	'17 Ar	Hondo.

Peutet, Jean Paul	'17 Ag	Dallas.
Phillips, Jackson Marion	'18 Ag	Lima.
Pierce, John Leonard	'19 Sci	Brownsville.
Pierson, John Cleveland	'16 Ag	Haskell.
Pinkston, Lucian Albert	'16 MeE	Corsicana.
Pitman, Dempsey William	1 c	Arkadelphia, Ark.
Pittman, Eugene	1 e	Fort Worth.
Ponder, Leander Elvin	Sp Ag	Bryan.
P'Pool, Howard Oates	2 f	Wall.
Porter, Bishop Garvin	1 d	Tenaha.
Porter, James	'19 EE	Graham.
Porter, John Crumbaugh	'19 MeE	Terrell.
Porter, Thomas Sharp	'16 Ag	Boyd.
Potter, Mark Milton	'18 EE	Galveston.
Potthast, Eugene B	'19 MeE	Weimar.
Powell, Clayton Warren	Sp Ag	Coleman.
Powell, Roger Q. Mills	1 g	Austin.
Powell, Stona Newland	'19 CE	Bangs.
Powers, Garland Arch	'17 Ag	Lockhart.
Praeger, Otto, Jr	'19 CE	Washington, D. C.
Prestridge, Kenneth Kade	'17 CE	Alvarado.
Prewett, Roma Charles	Sp Ag	Fort Worth.
Price, Alexander Johnson	'18 EE	Galveston.
Price, James Byron	Sp Ag	Nacogdoches.
Prideaux, George Dewey	1 d	Farmer.
Priester, Lewis Arnold	'17 EE	Richmond.
Priester, Leslie Emil	'18 EE	Richmond.
Prime, Wendell Francis	'18 Ar	Houston.
Pryor, Wade Frank	1 f	Valley View.
Punchard, Herbert Gillespie	Sp Ag	Riesel.
Purcell, Clyde Marsh	2 c	Galveston.
Purvis, Henry Lee	1 d	Proctor.

Ragland, William Shaw	'19 GE	Mercedes.
Rainey, David Erasmus	1 d	Paris.
Rambo, James Calvin	1 c	Bald Prairie.
Randal, Horace Gibson	2 c	Brownfield.
Randolph, Thomas Worsham	'19 ChE	Huntsville.
Range, Noah Lively	'19 Ag	Garland.
Rasbury, Edgar Leonidus	'18 Ag	Ballinger.
Rasmussen, Abbey Andrew	'19 MeE	Port O'Connor.
Rawlings, Carter Thomas	1 d	Bronte.
Ray, Clint Haggard	2 c	Pettus.
Ray, Joel Klifford	1 c	Childress.
Ray, Paul Franklin	'16 Ag	Belton.
Ray, William Jewell	'18 Ag	Jewett.
Raymond, William Frank	1 c	College Station.
Read, Charles Henry	'18 Ag	Memphis.
Reed, William Davis	1 e	Holland.
Rees, Roy Alvin	'19 Ag	Center Point.
Reeves, Ely Harris, Jr	1 c	Pittsburg.
Reeves, Newman Walter	Sp Ag	Childress.
Regenbrecht, Edward Michael	'18 Ag	Sealy.
Reid, Joseph Jenkinson	1 e	Bryan.
Reily, Jacob Merlin	2 c	D'Hanis.
Reily, Paul Patrick	'17 Ag	D'Hanis.
Renshaw, Ford Worthington	1 f	Bridgeport.
Richardson, Joseph Chambers	1 e	Liberty.
Richardson, James Samuel	'16 Ag	Henderson.
Riedel, Wilfred Herman	'19 EE	Yorktown.
Riesner, Edmund Laritz	'16 CE	Houston.
Rigney, Emory Elmo	'18 Ag	Leonard.
Ringness, Selmer Morris	1 g	Norse.
Riordan, Charles Edward	'19 Ag	Gainesville.
Risinger, Lloyd Voss	1 g	Purmela.
Robert, David Richard	2 h	Albany.

Robert, Jack Baker	'16 Ag	Albany.
Robertson, Albert Louis	'19 Ag	Gainesville.
Robertson, Allen West	Sp Ag	Gonzales.
Robertson, John Marshall	'16 MeE	Ganado.
Robinson, Levi	'19 Ag	San Benito.
Robson, William Sion	'18 Ag	La Grange.
Rodgers, Walter Rex	'19 Ag	Amarillo.
Roe, Peter Henry	'17 EE	San Antonio.
Rogers, Joe Carroll	'18 MeE	Hondo.
Rollins, Jesse Thomas	1 d	China.
Rollins, John Wesley	'16 Ag	China.
Romberg, Louis D	'19 MeE	Holland.
Root, Herbert Oliver	1 c	Corsicana.
Rose, Martin Arden	'18 MeE	Schulenburg.
von Rosenberg, Hilton Otto	1 d	Hallettsville.
von Rosenberg, Leslie August	'16 Ar	Hallettsville.
von Rosenberg, William Edward	'18 Ag	Hallettsville.
Rosenfield, Joseph Levy	'16 CE	Galveston.
Ross, Barnett	1 c	Del Valle.
Ross, Henry	2 c	Del Valle.
Rothe, Hans Hugo	'17 Ag	Hondo.
Rountree, John Blackwell	'17 Ag	Rockdale.
Rountree, Lee C	'19 CE	Sherman.
Rowell, Tom Darrel	1 e	Jefferson.
Royder, Douglas Edell	1 c	Wellborn.
Royder, Douglas Roland	2 c	Wellborn.
Royder, Jeff Pettus, Jr	1 d	Wellborn.
Ruckman, Frank Haskins	2 c	Karnes City.
Ruckman, John Dickson	1 d	Karnes City.
Rueter, William H	1 c	Waco.
Runge, Hans Eyl	'16 TE	Galveston.
Runnion, Marvin Francis	1 e	Wolfe City.
Russell, George Hill	'17 Ag	Cotulla.
Russell, Ralph Woodruff	1 f	San Antonio.
Rust, Francis Henessy	1 c	Galveston.
Rylander, Wilbur Edmond	Sp Ag	San Marcos.

Sain, James Emerson	'19 Ag	Alice.
Sandel, John Mickle	1 e	Shiro.
Sanders, Andrew Newell	'17 TE	Lavernia.
Sanderson, Thomas Pryor	1 c	Fort Stockton.
Saunders, Roy Francis	'18 Ag	Blanco.
Savage, Marshall Edward	'18 CE	Florence.
Sawyer, Horace Adali	'16 CE	Fate.
Schaefer, Henry Joseph	1 e	Schulenburg.
Schaer, Robert	'19 ChE	Chapel Hill.
Scherer, Victor	'19 Ag	Weatherford.
Schiller, Ivan	'18 Ag	Sealy.
Schmidt, Archibald Gottfried	'17 MeE	Eagle Pass.
Schmidt, Herman, Jr	1 g	Palestine.
Schneemann, Simon Pool	1 g	San Angelo.
Schornstein, Raphael Mondra	'16 Ar	Galveston.
Schramm, Albert Charles	Sp Ag	Taylor.
Schuchardt, Donald Vincent	'18 Ag	San Antonio.
Schwartz, Joe Willie	1 f	Schulenburg.
Scott, Thomas R	'19 EE	Houston.
Scrimgeour, William Boyer	'18 EE	Galveston.
Scudder, Thomas Enoch	'19 Ag	Waco.
Seals, Chester Roscoe	2 c	Archer City.
Seargeant, Albert James	'18 CE	Brackettville.
Seele, Hermann Hugo	'16 EE	New Braunfels.
Sengelmann, Silva Samuel Henry	2 f	Schulenburg.
Settegast, Marion Edward	'18 Ag	Houston.
Sexauer, Will Gottlieb	'18 EE	San Antonio.
Seymour, Sam K	'17 Ag	Columbus.
Shamblin, Allan Jackson	'19 CE	Houston.

Shankle, George Clifford	'19 EE	Alvord.
Sharp, William Joseph	1 f	San Antonio.
Shaw, Jessie Vernil	'19 MeE	Rogers.
Shelton, Clarence Marvin	Sp Ag	Hubbard.
Shelton, Claud Wallace	Sp Ag	Hubbard.
Shelton, Jack	'17 Ag	Brownwood.
Sherrill, Clement	'19 Ag	San Marcos.
Sherrill, William	1 c	San Marcos.
Shield, Gerome Wellington, Jr	Sp Ag	San Angelo.
Shiner, Vernon Jack	'18 Ag	San Antonio.
Shipp, Karl Alan	'19 EE	Lorena.
Short, James Clay	'16 CE	Bandera.
Sides, Wesley Kaufman	2 c	Grand Saline.
Simpson, George	Sp Ag	Bryan.
Sinclair, William Carl	'16 EE	Wolfe City.
Singletary, Harry Hunter	'16 EE	Atlanta.
Singleton, Darwin Eldredge	'18 EE	Lufkin.
Singleton, C. Neill	'19 MeE	Lufkin.
Skeeler, William John	'16 Ag	Orange.
Skinner, Henry Wellington	2 c	Karnes City.
Skramstad, Selmer Harris	'19 EE	Clifton.
Slagle, Robert Lester	'18 EE	Troup.
Slay, Clyde	'16 Ag	Italy.
Slay, John Richardson	'19 Ag	Frost.
Slemmons, Jesse	'18 TE	Lone Oak.
Sloane, Story Jones	1 d	Port Arthur.
Smith, Arthur Lee	'18 Ag	Blanco.
Smith, Donald Lester	'19 Ag	Sulphur Springs.
Smith, Lewis James	'19 Ag	Conroe.
Smith, Langston Montgomery	'16 Ag	Tyler.
Smith, Michael Gibson	'17 EE	San Augustine.
Smith, Philip Basil	'17 Ag	San Augustine.
Smith, William Hiram	'19 EE	DeLeon.
Sneed, P. L., Jr	'18 Ag	Montgomery.
Snow, Oron Lynn	'18 CE	Bangs.
South, Dudley Prichett	Sp EE	Houston.
Sowder, Elmer Jesse	'19 EE	Amarillo.
Sparks, Thomas Eugene	1 e	Seguin.
Spencer, Donald Allison	1 d	Crosbyton.
Spencer, Oliver Forbes	'17 Ag	Crosbyton.
Splawn, George Watson	1 c	Greenwood.
Spong, Samuel Cleo	'19 MeE	Rockwall.
Sprague, Carl Tyler	'19 Ag	Bremond.
Sprott, Earl Mack	2 c	Killeen.
Sramek, John Neil	'16 MeE	Bryan.
Stacey, John Hammond	'19 MiE	Dallas.
Staerker, Otto	'18 CE	Cuero.
Stallings, Duke Harris	1 e	Flowella.
Standifer, Lilburn Echols	'17 Ag	Spur.
Stark, Albert Adolph	1 f	San Antonio.
Starnes, Jesse Lee	'18 Ag	San Antonio.
Stayton, George Kleberg	2 c	Corpus Christi.
Stearns, Roy Earl	'18 Ag	Waco.
Steinfeldt, Robert Henry Carl	'19 CE	San Antonio.
Stephens, Uel	'16 CE	Lometa.
Stevens, David Lee	'19 Ag	Mexia.
Stevens, Henry Grady	1 c	Jacksonville.
Stevenson, Donald Alfred	'18 Ag	Galveston.
Stewart, John Sylvester	'19 Ag	Houston.
Stewart, Ross	1 g	Houston.
Stiles, Marvin	2 c	Ohio.
Stiles, Robert Walker	'16 Ar	San Antonio.
Stiles, Stanford Chaille	'19 Ag	Detroit.
Stockton, Haywood Paul, Jr	'17 CE	Louise.
Stoffers, Christian Crawford	'19 Ag	Graham.
Stolz, Clinton R	1 d	La Grange.

Stoner, Charles DeWitt	'16 EE	Lakeland, Fla.
Storm, John David	1 c	Hedley.
Striebeck, Herbert William	'19 CE	Floresville.
Stroman, Govan Napoleon	'17 Ag	Uvalde.
Sullivan, Jess Edward	1 c	Cisco.
Sullivan, William Jennings Bryan	1 e	Fort Worth.
Sumner, Lawrence Earl	1 d	Blanket.
Swink, Wilmer Turner	'17 Ag	Dawson.

Tabor, Charles Hillsman	1 c	Bryan.
Tabor, John Franklin	1 f	Oakhurst.
Taliaferro, Champ Lee, Jr	'18 TE	Henderson.
Tanner, Carl	'16 Ag	Wolfe City.
Tanner, Paul Franklin	1 e	Fort Worth.
Tarkington, Shelby Grant	'18 Ag	Yoakum.
Taylor, Bill Northcutt	'19 CE	Longview.
Taylor, Clarence Eugene	1 d	Eagle Pass.
Taylor, Clifford J	1 d	Cumby.
Teague, Charles Leroy	2 c	Knox City.
Temple, Theodore Watkins	'17 CE	Weatherford.
Thaxton, Robert Calvin	'16 Ag	Mason.
Thaxton, William Mogford	'19 Ag	Mason.
Tholl, Frank Arthur	'19 MeE	Dallas.
Thomas, Allan	1 d	Farwell.
Thomas, Edwin Wayne	'17 Ag	Marfa.
Thomas, William George	'19 MiE	Rogers.
Thomason, James Hendon	'16 Ag	Huntsville.
Thompson, Aubrey Lee	'19 MeE	Troy.
Thompson, John Percy Street	1 c	Houston.
Thompson, Roy Gilbert	'19 MeE	Memphis.
Thomson, John Throckmorton	2 c	San Angelo.
Thornhill, Van de J	'19 MeE	Navasota.
Thornton, Penn Bedell	1 d	Houston.
Thrasher, William Broadway	1 e	Austin.
Tighe, Louis Thomas	'18 EE	Sour Lake.
Timberlake, Roland Hewey	1 e	Alice.
Timm, Henry Otto	Sp Ag	Hallettsville.
Tomlinson, Gaither Roger	'19 Ag	Denton.
Tooley, Roy Powell	'19 MeE	Weatherford.
Torrence, Richard Herley	1 c	Waco.
Torti, Maurice Leo	'16 Ag	Tyler.
Trickey, Charlie Thomas	'17 CE	Sanger.
Tuerpe, Elmer Christopher	'19 Ag	Benton.
Tumlinson, Otto Gurvas	'18 Ag	Verdi.
Turnage, Rodger Elmo	'16 EE	La Grange.
Turner, Delmar Augustus	1 d	New York City, N. Y.
Turner, George	1 c	Livingston.
Turner, William Taber	'19 AE	Brownwood.

Uhr, Irwin Adolph	'17 EE	San Antonio.
Underwood, John Carson, Jr	'17 Ag	Houston.
Upson, Mark Florea	'18 Ag	Sabinal.

Vance, John William	'16 Ag	Gouldbusk.
Vandervoort, Charles Wesley	'19 Sci	Carrizo Springs.
Vaughan, Hardy Allen	Sp Ag	Hewitt.
Vaughn, George Albert	1 e	Tulia.
Veazey, Morton Milton	'19 EE	Smithville.
Volz, Alphons Franklin	2 c	Mission.

Wadley, Burr Plevin	'17 Ag	Ferris.
Waggoner, Thomas Adlai	2 f	Duncanville.
Walker, Albert Alvia	'17 CE	Rockwall.
Walker, John House Beyne	2 c	Houston.
Walker, James Knox	'17 CE	Azle.
Walker, John Thaddeus	'17 CE	Azle.

Walker, John Terry	1 c	San Saba.
Walker, Littleton Samuel	2 c	Waldrip.
Walker, Tom Daniel	Sp Ag	Crawford.
Wallace, Henry Clay	2 f	Belton.
Waltman, Dee Witt	1 c	Hearne.
Walton, Otis Lee	1 c	Hubbard.
Walton, Robert Frank	Sp Ag	Hubbard.
Ward, Cecil Devane	1 d	Cumby.
Ward, Henry Hodges	1 c	Gomez.
Ward, Myron Frank	2 c	San Antonio.
Warfield, Hunter Rarey	Sp Ag	Crockett.
Waring, R. Percy M	1 c	Waring.
Warren, George Russell	'18 Ag	Yantis.
Warren, Willie Floyd	1 c	Lavernia.
Waterhouse, Walter Howard	'16 Ag	St. Louis, Mo.
Watkins, John Dupuy, Jr	1 e	Asherton.
Watkins, William Howard	'18 Ar	San Antonio.
Watson, Edward Italy	'18 CE	Galveston.
Watson, Robert Lee	Sp GE	Navasota.
Weatherly, Howard Baker	1 c	Garrison.
Weaver, Alford Bradley	'17 EE	Rule.
Weaver, Donal Louis	1 c	Childress.
Webb, John Edgeworth	'18 Ag	Bryan.
Webb, James Meriwether	'19 Ag	Weatherford.
Weber, Seidel	1 f	Nixon.
Weir, Henry Bradley	'19 Ag	Galveston.
Wellage, George Francis	'16 Ag	Eagle Pass.
Wendler, Eugene	2 f	Boerne.
Westbrook, Titus Carr	1 c	Lorena.
Westerhoff, Frederick William	Sp Ag	Moulton.
Weyland, Alvin Harold	'19 EE	Taft.
White, Jesse Egbert	'16 EE	Gainesville.
White, Robert W	1 d	Brady.
Whitely, Felix Elbert	'18 MeE	Alpine.
Whittemore, James A	1 e	Annona.
Whitton, Robert Benjamin	'16 Ag	Timpson.
Whorton, J. Homer, Jr	1 f	Blooming Grove.
Wickliffe, Robert Garland	'19 EE	Chillicothe.
Wicks, Mervyn	1 c	Wharton.
Wiedenfeld, Benno Louis	1 f	Comfort.
Wiesen, Thomas Ferdinand	1 d	Fort Worth.
Wilhite, Ray Maynard	'18 MeE	Lometa.
Wilkerson, Muldrow Perry	1 d	Navasota.
Willcox, Jack Edgar	'19 EE	Big Springs.
Willett, Noyes Waters	'18 EE	Thurber.
Williams, John	1 c	Kerrville.
Williams, Jesse Caleb	1 c	Fort Stockton.
Williams, James Wishart	'18 CE	Hamilton.
Williams, Stump Marvin	'16 Ag	Corsicana.
Williams, Walter Montgomery	'19 Ag	San Antonio.
Williamson, Charles Donavan	1 d	Fort Worth.
Williamson, John Albert	'19 AE	San Antonio.
Willoughby, Edward B	1 d	Brady.
Wills, James Valliant	'19 CE	Bruceville.
Wilson, Charles Sebastian	'16 MeE	Bryan.
Wilson, Estil Boone	1 d	Buda.
Wilson, Eugene Stanley	'19 ChE	Denton.
Wilson, Frank William	'17 Ag	Port Lavaca.
Wilson, Joe Clay	'18 Ag	Normangee.
Wilson, James Vernon	'19 Ag	Florence.
Wilson, Thomas Decator	Sp Ag	Bryan.
Winters, Harvey Emmett	2 c	Stephenville.
Wipprecht, Carl	'18 Ag	Bryan.
Wipprecht, Read	'17 Ag	Bryan.
Wise, Fred Calvin	'19 Ag	Spring Hill, La.
Wiseman, Walter Herron	1 h	Lavernia.

Witcher, Loftin Verdery	'16 Ag	Fort Worth.
Wittman, Frank Philip	'19 Ag	Bryan.
Wolston, Clinton Sawyer	1 e	Galveston.
Wood, Albin Francis	1 d	Richland Springs.
Wood, Herbert Reddoch	Sp Ag	Nogales, Arizona.
Wood, William Maxwell	'17 Ag	Hubbard.
Woodson, James Monroe	2 c	Temple.
Woody, George Abe	'17 MeE	Tilden.
Wooten, Ralph Hudson	'16 Ag	Senatobia, Miss.
Wormser, Marcus Royle	'19 Ag	Laredo.
Worthington, George Edward	'19 CE	Mesquite.
Wotipka, Walter Martin	'17 Ag	Flatonia.
Wynn, Charles Clinton	Sp Ag	Bryan.
Wythe, Landon Douglas	'18 Ag	Weatherford.
Yeates, Clarence Carpenter	'17 EE	Katy.
Young, George Thomas	1 c	Brownwood.
Young, John Irion	Sp Ag	Montgomery.
Young, James McDonald	'18 Ag	Hallettsville.
Younger, Jack	1 d	Bowie.
Zedler, Otto Frederick Christian	'17 EE	Ottine.
Zeuhl, Albert	'18 MeE	Lavernia.

SUMMER SCHOOL OF COTTON CLASSING, 1915.

Ahrenbeck, B. H	Normangee.
Barnett, C. E	Zulch.
Beken, C. G	Karnes City.
Bode, W. H	Nordheim.
Bradbury, L. M	Franklin.
Bridges, Hays	Henderson.
Cartwright, C. J	Waco.
Clarke, Wm	Galveston.
Clayton, A. L	Sherman.
Cochrum, J. G	Groesbeck.
Conn, J. W	Rio Vista.
Cox, Pane	Terrell.
Crook, B. D	Martindale.
Darragh, Thos. E	Granite Mountain.
Dean, C. E	Ralls.
Easterly, Joe	Easterly.
Ehlers, A	La Grange.
Ellis, J. L	Oakville.
Fly, Fitz	Swink, Okla.
Fountain, E. J., Jr	Bryan.
Gardner, J. C	Terrell.
Garfinkle, H. L	Calvert.
Gilliam, J. E	Dallas.
Gossett, G	Mabank.
Gray, G. T	Gonzales.
Gray, W. H	Thornton.
Gray, W. W	Thornton.
Harper, A. A	Martindale.
Harris, R. A	Red Rock.
Hearrell, F. C	Bronte.
Heyer, Owen	Weimar.
Huston, R. E	Henderson.
Jennings, W. C	Martindale.
Ketchum, A. R	Falls City.
Lagrone, Fred	Joaquin.
Lamm, E. J., Jr	San Antonio.
Little, W. T	Norton.
Locke, E. L	Nacogdoches.
McDaniel, H	Hillsboro.
McDonald, V. C	Normangee.

Martin, W. N	Vernon.
Mathis, W. J	Kaufman.
Menke, O. J	Guadalupe.
Moore, F. L	Bastrop.
Moore, L. J	Fort Worth.
Narrod, E	Hico.
Niemeyer, E. V	Bremen, Germany.
Poe, F. T	Klondyke.
Pressley, J. E	Caldwell.
Pustka, A	Rowena.
Robinson, J. C	Omaha.
Shropshire, V. V	Colorado City.
Smith, Chas	Melvin.
Smith, J. P	Fort Worth.
Smith, O. C	San Marcos.
Smith, T. T	Melvin.
Staehely, Walter	Austin.
Stanley, J	Schulenburg.
Thomas, M. H., Jr	Dallas.
Thompson, J. E	Mineral Wells.
Vaughan, C	Lawton, Okla.
Wiggins, W. D	Gainesville.
Wilson, R. Z	Normangee.
Woodward, M. M	Clyde.
Wooten, T. J	Carthage.

SHORT COURSE FOR FARMERS, 1915.

Acker, H. W	Whitehouse.
Adrian, W. B	Ben Wheeler.
Alexander, E. G	Dallas.
Allen, A	Kountze.
Allen, Mrs. R. O	Bryan.
Allison, J. L	Hedley.
Andert, Frank	Bryan.
Arledge, H. B	Crockett.
Armstrong, Miss Alma	Purdon.
Armstrong, S. J	Purdon.
Arnold, Mrs. A. J	Waco.
Avent, Miss Maggie	Hereford.
Bagwell, J. F	Wharton.
Banks, R. L	Weatherford.
Banzhaf, Geo	Rockwall.
Beeson, H. W	Lovelady.
Benton, H	Amarillo.
Boys, W. L	Hereford.
Brown, C. M	Houston.
Brown, T. W	Trenton.
Brown, Mrs. W. F	Ballinger.
Buchanan, A. W	Bryan.
Bugbee, C	Dallas.
Bullington, J. S	Beeville.
Burke, J. K	Estocado.
Calvert, W. C	Sweetwater.
Campbell, J. W	Holliday.
Carter, W. H	Marshall.
Castles, J. O	Newark.
Cathey, Mrs. A. C	Comanche.
Chaney, A. T	Mineral Wells.
Clapp, H. A	Collegeport.
Clark, E	Francitas.
Clark, Mrs. E	Francitas.
Click, Mrs. Mae	Bryan.
Cline, Mrs. Wm. B	Bryan.
Coffman, S. L	Abilene.
Collier, C. M	Goliad.

Collier, J. H	Hearne.
Collier, R. B	Hearne.
Combs, J. M	Kountze.
Cook, Miss Irma	Bryan.
Cox, E. L	Eastland.
Cox, J. F	Stephenville.
Craddock, F. J	Denton.
Cramer, Miss Lois	Marshall.
Crenshaw, Mrs. E. W	Bryan.
Cross, Mrs. Cora M	Fort Worth.
Crow, L. C	Prairieville.
Cunyus, J. P	Longview.
Darragh, T	Marble Falls.
David, Merle	Gonzales.
Davis, J. W	Mesquite.
Davis, R	Mt. Vernon.
Davis, W. E	Austin.
Deabler, C. H	Dayton.
Detwiler, F	Paducah.
Dewhurst, J	San Antonio.
Dinsmoore, S	Rio Hondo.
Donovan, Albert	Dallas.
Drake, J. G	Lockhart.
Duck, I. B	Abilene.
Duck, Mrs. I. B	Abilene.
Dulin, W. A	Colorado.
Durrenberger, I. A	Pearsall.
Eaton, D. F	Comanche.
Easley, G. L	Waco.
Easley, H	Waco.
Ebel, Miss Pauline	Gonzales.
Edmonds, J. R	Quitman.
Edwards, Kirk	Henrietta.
Eisenhart, J. C	Beaumont.
Elwell, L. L	Fant City.
Elwell, Mrs. L. L	Fant City.
Eudaly, G. W	Fort Worth.
Eudaly, Mrs. G. W	Fort Worth.
Eubank, C. H	Winters.
Evans, J. A	Fort Worth.
Evard, Mrs. A	Rockdale.
Evard, Mrs. A. M	Rockdale.
Everts, B. A., Jr	Clodine.
Ferguson, A. M	Sherman.
Ferguson, Mrs. Cassie	Corsicana.
Falsom, C. T	Mound.
Foster, D. M	Carthage.
Foster, H. B	El Paso.
Foster, Mrs. M. B	Navasota.
Francis, Mrs. M	College Station.
Frazier, Mrs. Daisy M	Springfield.
Gaines, Mrs. Anna	Volney.
Gandy, Miss Bess	Bryan.
Gandy, Miss Coma	Bryan.
Gandy, L. M	Bryan.
Ganzer, Wm	Denton.
Ganzer, Mrs. Martha	Denton.
Gatewood, G. R	Cleburne.
Gentry, E	Mineola.
Gentry, H	Palestine.
Gilliat, A. G	Boerne.
Gilliam, R. A	Dallas.
Gilliland, D. B	Coleman.
Glee, C. G	Archer City.
Goldsmith, J. B., Jr	Quitman.
Goldsmith, Mrs. J. B	Quitman.

Goodwin, Miss Lois	Colorado.
Gorham, R. A	Waco.
Gough, R. H	Hereford.
Graham, A. G	El Paso.
Grant, J. W	Jola.
Griffin, J. W	San Saba.
Grinsted, Geo	Orange.
Griswold, Mrs. D. T	Bellville.
Grosse, Miss Mary	Gonzales.
Gruss, E. W	Galveston.
Hale, Miss Ethel	Mineral Wells.
Hall, Jeff	Cookville.
Halton, G	Orange.
Hanks, T. P	Jefferson.
Harrall, V. P	Gonzales.
Harris, C. H	Fort Worth.
Harris, Mrs. Mary	Italy.
Harris, R. D	Italy.
Harris, Ralph	Italy.
Harvin, W. C	Seabrook.
Hays, G. V	Francitas.
Helton, J. E	Spiegelville.
Henley, Miss Kate Lee	Temple.
Herring, Miss Cleo	Comanche.
Hertel, C. A	Red Bluff.
Hester, Miss Gertrude	Gonzales.
Hornbeak, J. W	Corsicana.
Horner, J. P	Lockhart.
Hovenkamp, L	Fort Worth.
Hovenkamp, M., Jr	Keller.
Hunt, W. H	Bowie.
Hunter, L. T	Henrietta.
Hutchings, L	Mt. Pleasant.
Johnson, G. W	Corpus Christi.
Jones, C. S	Bryan.
Jordan, A. B	Corsicana.
Kinnard, A. W	Bryan.
Kloppenburg, J	Kingsville.
Kolberg, O. G	Eagle Lake.
Krisel, J. M	Lincoln, Neb.
LaRoe, C. M	Kaufman.
Latham, A. M	Stephenville.
Latimore, Mrs. Gussie	Marshall.
Lee, Wesley	Groveton.
Lesesne, S. M	Galveston.
Lester, R. L	Orange.
Lester, Mrs. R. L	Orange.
Lester, Miss Sadie	Gonzales.
Lindiman, Miss Mary Lou	Beeville.
Locke, Miss Mary	Zack.
Lusk, R. W	Woodson.
Lusk, Willard	Woodson.
Lund, F. P	Midfields.
McCrackin, A	Sherman.
McCullin, G. F	Lovelady.
McCurdy, C. S	Saginaw.
McDowell, C. H	Beeville.
McKean, J. M	Prairie Lea.
McKnight, J. B	Dialville.
McLelland, Geo. P	Ballinger.
McLelland, Miss Lila May	San Antonio.
McMaster, W. M	Clarksville.
Maddox, Miss Mary Sue	Weatherford.
Mann, R. E	Childress.
Marks, L	Jacksboro.
Martin, B. B	Liberty.

Martin, J. E	Valley View.
Martin, Miss Minnie	Beeville.
Martindale, Mrs. Clara	Lockhart.
Marshall, Mrs. Bula A	
Mathis, R. J	Alice.
Matthaei, Miss E	Bellville.
Mayo, E. L	Goldthwaite.
Mayo, Mrs. E. L	Goldthwaite.
Meadows, G. C	Hedley.
Means, H. M	Vernon.
Meinscher, Wm. E. A	Leroy.
Menke, O. J	Guadalupe.
Metcalfe, T. P	Amarillo.
Midkiff, W. M	Paducah.
Moore, C. B	Van Alstyne.
Moore, Miss Roma	Woodlong.
Moore, V. M	Fort Worth.
Murphree, S. D	Mt. Pleasant.
Murphree, Mrs. S. D	Mt. Pleasant.
Murray, Fritz	Eagle Lake.
Myers, D. C	Cookville.
Nabors, J. D	Mound.
Neely, Miss Imogene	Roscoe.
Nichols, T	Farwell.
Newshaw, Mrs. Stella	Fort Worth.
Nowlin, A. L	
Onishi, R	Pierce.
O'Reilly, Miss Ella	Cleburne.
Orms, G. W	Mineola.
Outlaw, G. B	
Overstreet, L. K	Farwell.
Owen, E. F	Corsicana.
Owensby, W. S	Cleburne.
Pearce, Miss L. L	Jourdanton.
Pegues, Perry	Cotulla.
Persons, R. W	Bay City.
Persons, Mrs. R. W	Bay City.
Phillips, S. L	Warren.
Pipkin, J. A	Waco.
Plaster, W. M	Bedias.
Price, D. O	Hemphill.
Prince, A. H	Orange.
Prince, G. D	Village Mills.
Quicksall, J. F	Cleburne.
Quicksall, J. L	Waco.
Ray, Mrs. J. J	Bryan.
Reagan, O. C	Oakville.
Robbins, O. H	Goldthwaite.
Ross, L. S	Willis.
Ross, W. H	Dallas.
Runnels, L. H	Willis.
Ryall, Wheeler	Jasper.
Sanders, W. O	Bryan.
Schauerhammer, K	Bellville.
Schmeltz, Wm	Houston.
Schmidt, W. A	Troup.
Schonefeld, J	Vattmanville.
Sebesta, J. B	La Grange.
Scott, L	Marshall.
Schoffield, A. J	Beaumont.
Shotwell, J. C	Crockett.
Sloan, J. H	Victoria.
Sloane, S. J	Port Arthur.
Smith, G. A	Beaumont.
Smith, Mrs. Maggie	New Baden.
Smith, W. S	Gonzales.

Stallings, W. L	Houston.
Stanford, J. E	Woodville.
Stevenson, H. W	Liberty.
Story, Miss Gladys	Alice.
Strange, D. M	Pittsburg.
Street, G. C., Jr.	Houston.
Street, Mrs. G. C	Houston.
Sumrall, L. G	Brenham.
Tackett, R. O	Oakville.
Tauber, Miss Mary	College Station.
Templeton, J. M	Loraine.
Thomas, G. S	Cleburne.
Tisdal, N. R	Huntsville.
Tisdal, Mrs. N. R	Huntsville.
Tobias, Miss Edith	Kurten.
Townsend, W. E	Port Arthur.
Troy, Mrs. T. B	Houston.
Underbrink, I. L	Riviera Beach.
Vandiver, M. H	Canton.
Van Kirk, A. S	Bonham.
Van Kirk, Mrs. A. S	Bonham.
Villiva, S	Beaumont.
Vinson, Mrs. L. C	Sweetwater.
Walker, J. L	Goliad.
Walker, J. O	Laredo.
Walter, C. K	Kaufman.
Walters, T. B	Jasper.
Walters, Mrs. T. B	Jasper.
Warfield, H. R	Crockett.
Waugh, J. A	El Campo.
White, H. H	Arlington.
Witt, L. E	Bonham.
Whitten, A. S	Jourdanton.
Wilkerson, J. S	Newark.
Wilkinson, C	Mauriceville.
Wilkinson, L. C	Edna.
Wilkinson, Mrs. Mary	Edna.
Williams, Sam	Clarendon.
Williamson, B	Palacios.
Williamson, Miss Maude	Palacios.
Willis, R. S	Montgomery.
Willis, Mrs. S. A	Montgomery.
Wilson, C. C	Sweetwater.
Wood, T. B	Groveton.
Woodward, Miss Stella E	Bryan.
Yell, Miss Blanche	Conroe.
Young, Mrs. F. A	Montgomery.
Youngblood, J. H	Spiegelville.
Zollner, Wm	Rockwall.
Zollner, H	Rockwall.

SHORT WINTER COURSE IN HIGHWAY ENGINEERING.

Arledge, J. G	Crockett.
Goolsbee, A. R	Chester.
Smith, D. A	Bryan.

SUMMARY OF ENROLLMENT, SESSION 1915-1916.

REGULAR SESSION.

Class.	Agr.	Sci.	Arch.	AE.	ChE.	CE.	EE.	GE.	ME.	MilE.	TE.	Total
Graduate	4	..	..	..	..	3	2	..	1	..	..	10
Senior	72	..	8	4	6	15	20	..	10	..	1	136
Junior	83	..	7	..	..	20	36	..	13	..	3	162
Sophomore	85	..	2	1	5	22	22	..	12	..	5	154
Freshman	78	9	3	5	8	30	43	1	27	4	..	208
Specials	53	1	..	..	..	1	2	1	2	..	2	62

TWO-YEAR COURSES.

	C	D	E	F	G	H	
Second Year	38	..	..	11	2	3	54
First Year	91	86	45	33	20	7	282
							1068

Total, Regular Session	1068
Summer School of Cotton Classing, 1915	65
Summer Short Course for Farmers, 1915	286
Winter Short Course in Highway Engineering, 1916	3
	1422
Less Duplicates	6
Grand total, 1915-16	1416

DEGREES AND HONORS CONFERRED AT THE THIRTY-NINTH ANNUAL COMMENCEMENT.

(June 8, 1915.)

MASTER OF SCIENCE.

Casper Alfred Wood,
B. S., Kansas State Agricultural College, 1911.

BACHELOR OF SCIENCE.

In Agriculture.

Adriance, G. W.
Allen, R. R.
Barraco, V. A.
Beckman, A. E.
Broun, T. R.
Brown, L. W.
Bugbee, J. S.
Burges, A. E.
Campbell, A. R.
Cherry, T. G.
Clark, S. F.
Coleman, W. C.
Collins, J. C.
Copeland, A. B.
Davis, C. J.
Davis, S. F.
Dodson, A. E.
Eiland, E. R.
Ellis, H. F.
Everett, G. D.
Francis, W. B.
Gammill, H. H.
Girardeau, E. R.
Greene, O. W.
Haller, C. F.
Holloway, L. E.
Kincheloe, J. M.
Kinnard, A. W.
McCollum, H. T.
Martin, W. P.
Mayo, H. M.
Montague, F. O.
Moore, J. H.
Mowery, I. H.
Palmer, G. C.
Persons, D. H.
Peters, E. M.
Sanders, J. L.
Sanders, M. D.
Savage, C. H.
Scott, D. W.
Sengelmann, G. H.
Stangel, W. L.
Tigner, J. H.
Turner, J. M.
Warren, C. F.
Washam, O. F.
Watson, J. L.
Wisrodt, C. E. P.
Yeary, H. E.
Yeary, J. C.
Zuber, N. D.

In Architecture.

Crown, P. T.
Rutan, W. L.

In Chemical Engineering.

Dunning, G. R.
Jarvis, J. R.
Saper, G. A.
Skeeler, L. J.
Whittet, C. S.

In Civil Engineering.

Bell, J. E.
Bell, T. L. (As of 1913)
Burchard, S. H.
Cawthon, F. W.
Denton, V. C.
Faber, B. H.
Francisco, E. O.
Gillespie, W. S.
Hurdle, E. F.
McCarty, S. C.
Mason, S. K.
Moss, M. A.
Spencer, T. C. (As of 1913)

In Electrical Engineering.

Carson, W. W.
Clarkson, P. W.
Claytor, E. M.
Davis, D.
Dickie, B. H.
Hogue, E. N.
Hudspeth, C. C.
Nash, J. F.
Rack, E. C.
Smith, M. W.
Stribling, S. R.
Young, R. L.

In Mechanical Engineering.

Alexander, J. R.
DeLong, R.
Homann, F. A.
Reynolds, W. L.
Smitham, V.

In Textile Engineering.

Browder, J. H., Jr.
Sansom, G. W.

CERTIFICATES IN TWO-YEAR COURSES.

In Agriculture.

Allen, O. L.
Bell, W. F.
George, C. J.
Glover, R. E.
Lee, T. N.
Lill, J. F.
Long, A. W.
McCampbell, R. F.
May, R. L.
Milikien, M. A.
Morrow, J. S.
Nowlin, H. B.
Russell, G. H.
Schulze, H. O.
Waak, W.

In Textile Engineering.

Haiek, W. S.
Tuerpe, E. C.
Tuerpe, E. R.

SUMMARY OF DEGREES CONFERRED.

Advanced Degrees:		
Master of Science		1
Baccalaureate Degrees:		
B. S. (In Agriculture)	52	
B. S. (In Architecture)	2	
B. S. (In Chemical Engineering)	5	
B. S. (In Civil Engineering)	13	
B. S. (In Electrical Engineering)	12	
B. S. (In Mechanical Engineering)	5	
B. S. (In Textile Engineering)	2	
		91
Total		92

DISTINGUISHED STUDENTS.

At the end of each session students who have during the year received no term grade below "B" and who have no deficiency in "Practice," are announced as "Distinguished."

SENIOR CLASS.

Bugbee, J. S.
Campbell, A. R.
McCarty, S. C.
Nash, J. F.
Rutan, W. L.
Savage, C. H.
Skeeler, L. J.
Smith, M. W.
Stangel, W. L.
Wisrodt, C. E. P.

JUNIOR CLASS.

Camp, T. R.
Dennis, L. C.
Hawkins, A. R.
Metcalfe, P. B.
Owen, A. G.
Pierson, J. C.
Wooten, R. H.

SOPHOMORE CLASS.

Deputy, O. D.

FRESHMAN CLASS.

Bates, W. W.
Lipscomb, T. G.
Ludeman, L. L.
MacFadden, W.
Read, C. H.
Seargeant, A. J.

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

Arnold, L. L.
Downing, J. S.

Second Year.

Lee, T. N.
Long, A. W.
May, R. L.

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

First Year.

Garza, J. L.

REGIMENTAL ORGANIZATION, SESSION 1915-1916.

The Corps of Cadets is organized as a Regiment of Infantry of three Battalions and Band.

Second Lieutenant James R. Hill, 13th Cavalry, U. S. A.
Commandant of Cadets.

James M. Kenny, Q. M. Sergeant, U. S. A., Retired.
George Smart, 1st Sergeant, U. S. A., Retired.
John C. Hyland, Orderly Sergeant, U. S. A., Retired.
John J. Howard, 1st Sergeant, U. S. A., Retired.
Thomas Moran, 1st Sergeant, U. S. A., Retired.
B. P. Day, Chief Musician.
On duty in Military Department.

ASSIGNMENT TO ORGANIZATIONS.

T. F. Keasler, Colonel.
P. H. Olsen, Lieutenant Colonel.

Regimental Staff.

1. A. D. Bruce, Captain and Adjutant.
4. P. B. Metcalfe, Captain and Quartermaster.
9. J. W. Rollins, Captain and Commissary.
12. C. M. Easley, Captain and Ordnance Officer.

Regimental N. C. Staff.

O. S. Gray, Sergeant Major.
F. A. Crow, Quartermaster Sergeant.
R. W. Briggs, Commissary Sergeant.
J. M. Kendrick, Ordnance Sergeant.
D. B. Milner, Color Sergeant.

Band.

7. T. K. Morris, Captain.
16. E. L. Jarrett, 1st Lieutenant.
10. L. H. August, 2nd Lieutenant.
81. P. R. Perkins, 2nd Lieutenant.
J. R. Barnes, Drum Major.
N. E. Gardner, Chief Trumpeter.

13. G. B. Hanson, 1st Sergeant.
52. S. M. Williams, Sergeant.
53. J. M. Burkett, Sergeant.
76. E. C. Allison, Coporal.
74. F. A. Cooper, Corporal.
73. R. C. Leffel, Corporal.

First Battalion.

3. L. C. Dennis, Major.
1. E. D. Baccus, First Lieutenant and Battalion Adjutant.
4. N. M. Braumiller, Second Lieutenant and Battalion Quartermaster.
2. J. B. Joyce, Sergeant Major.

Company A.	**Company B.**	**Company C.**	**Company D.**
Captains.			
10. M. S. Beringer	5. J. C. Short	14. H. C. Carleton	8. J. D. Brown
First Lieutenants.			
10. M. T. Garrett	4. J. L. Henry	13. F. R. Coleman	7. A. Dickie
Second Lieutenants.			
16. W. E. Braumiller	17. C. Tanner	5. J. S. Mogford	7. J. F. Ehlert
20. D. Burns	11. F. O'Brien	18. S. P. McFadden	19. J. V. Curnutte
First Sergeants.			
7. W. L. Barbee	2. S. R. Craig	12. O. F. Zedler	9. F. W. Wilson
Sergeants.			
10. S. L. Metcalfe	11. J. A. Otto	9. C. B. Cartwright	24. G. A. Powers
63. B. G. Moreland	12. J. T. Walker	23. R. D. Elliott	74. L. A. Priester
62. I. Langford	29. E. S. Lyne	30. M. B. Gibson	2. G. A. Woody
36. A. C. Perrin	47. L. E. Standifer	56. E. K. Flack	35. H. H. Rothe
73. J. P. Peutet	41. J. F. Blanton	57. P. P. Reily	75. J. A. Barton
18. D. E. Martin		48. D. S. Buchanan	17. E. P. Hubbard

Corporals.

3. J. W. Grace	15. L. E. Tighe	20. E. E. Rigney	14. A. Oliver
28. J. L. Garza	33. O. L. Snow	39. J. C. McKimmey	22. D. S. Moore
7. L. E. Deats	52. L. E. Priester	64. J. H. Melton	65. C. L. Taliaferro
27. C. P. T. Griesenbeck	53. J. W. Duke	70. T. J. Davis	5. D. V. Schuchardt
51. A. Kimball	10. F. E. Whitley	11. E. C. Martin	66. V. J. Shiner
50. R. L. Slagel	54. B. F. Knolle	38. D. R. Royder	21. L. S. Walker
	77. O. Staerker	78. O. G. Tumlinson	79. S. Dickins

Second Battalion.

2. U. Stephens, Major.
2. J. B. Roberts, First Lieutenant and Battalion Adjutant.
8. J. L. Foster, Second Lieutenant and Battalion Quartermaster.
3. C. F. Braunig, Sergeant Major.

Captains.

Company E.	Company F.	Company G.	Company H.
3. A. D. Johnson	15. J. V. Meyer	13. T. R. Camp	16. A. C. Bull

First Lieutenants.

14. J. H. Thomason	12. J. W. Vance	6. H. B. Killough	5. A. C. Casey

Second Lieutenant.

15. C. B. Hefner	12. D. L. Helm	14. C. H. Gunn	1. J. M. Robertson
21. H. A. Sawyer	22. C. Hausser	23. H. S. Clarke	24. E. B. Patterson

First Sergeants.

11. M. J. Conway	3. L. L. Kotzebue	13. M. H. Brown	10. W. O. Farthing

Sergeants.

1. N. L. Peters	3. A. G. Schmidt	58. S. D. Hervey	6. J. K. Mattox
14. J. B. Cockrell	37. R. C. Lowry	19. I. G. Moore	26. E. R. Brecher
31. P. B. Dunkle	4. J. B. Rountree	38. H. F. Corry	71. P. G. Haines
44. W. C. Foster	50. W. C. Lockett	64. R. Q. Jennings	5. O. D. Deputy
13. T. B. Cochran	49. W. T. Swink	59. S. B. Dyer	72. J. L. Gibbs
43. A. A. Walker	25. P. H. Roe	32. D. L. Hook	20. W. T. Galliford
	76. I. A. Uhr		

Corporals.

1. A. J. Seargeant	29. E. B. Dudley	35. H. S. Myers	40. M. A. Rose
8. J. G. Ervin	16. J. L. Starnes	34. R. H. McAshan	41. C. C. Braden
23. W. E. Berry	69. A. R. McLean	72. C. M. Harvin	43. F. W. Judd
55. F. C. Brunneman	17. C. G. Pereira	69. S. K. Seymour	44. H. C. Knickerbocker
56. E. M. Sprott	67. F. W. Mogford	4. W. Kenan	45. H. J. Kennard
24. C. Wipprecht	30. M. E. Savage	71. J. L. Hudgins	42. H. Eldridge
80. C. C. Jobson	81. T. W. Temple	82. H. A. Armstrong	83. J. C. Landers
			84. J. S. Copeland

Third Battalion.

1. R. H. Wooten, Major.
3. H. E. Runge, First Lieutenant and Battalion Adjutant.
2. G. J. Cornett, Second Lieutenant and Battalion Quartermaster.
1. F. W. Halsey. Sergeant Major.

Captains.

Company I.	Company K.	Company L.	Company M.
11. R. Hawes	17. E. L. Riesner	6. G. C. Moffett	2. D. C. Kelly

First Lieutenants.

9. J. A. Connor	11. H. E. Miller	15. G. C. Meriwether	8. W. A. Collins

Second Lieutenants.

6. G. F. Wellage	9. J. D. McIver	3. R. J. Cole	13. W. R. Nisbet
21. V. W. Crawford	25. L. M. Smith	22. R. A. Hall	23. T. S. Porter

First Sergeants.

1. L. A. Kurtz	5. J. A. Darby	4. D. H. Kiber	8. J. Shelton

Sergeants.

15. J. W. Hicks
7. B. E. Irby
45. C. T. Trickey
60. W. B. Curtis
78. R. C. Black
46. G. N. Stroman
83. T. R. Brailsford
54. C. C. Allert
61. E. R. Allen
68. M. D. Gilfillan
80. J. T. Hanway
21. L. Newman
39. F. M. Lyle
67. G. E. McDaniel
34. J. A. Jenkins
H. L. Fry
66. A. J. Bennett
8. L. H. Earnest
69. C. H. Fleming
16. J. B. Bennett
27. V. E. Hafner
28. H. McFarland
70. G. A. Long
79. M. G. Smith

Corporals.

25. S. F. Hurt
46. B. F. Looney
12. L. C. Doney
26. J. M. Young
58. R. E. Stearns
60. M. H. Ford
84. M. J. Fahey
9. G. T. Givens
19. A. J. Price
47. D. E. Baker
61. R. S. Camp
31. R. A. Brotherton
48. W. B. Scrimgeour
6. F. J. Hockaday
32. H. W. Skinner
62. C. D. Bozeman
13. F. H. Ruckman
49. J. E. Slemmons
57. C. M. Copeland
85. J. S. Downing
2. G. B. Morgan
18. F. S. Anderson.
36. W. F. Prime
37. R. D. Crawford
59. T. G. Lipscomb
63. E. T. Nagle
86. G. C. Morris
87. W. W. Bates

Note.—The numbers indicate the lineal rank.

HOWELL TROPHY.

The Howell Trophy is a Texas Flag presented to the College in 1903 by Mr. W. S. Howell, of Bryan, Texas. A competitive drill is held each year during commencement to determine the best drilled company. This company is designated the Trophy Company and carries the flag during the following session. It is authorized to elect a Trophy Sergeant who is the Color Bearer.

The Trophy Company for the session 1915-16 is Company A.

ALUMNI.

(Association Organized 1886.)

C. O. Moser, Dallas	President
R. J. Potts, Waco	First Vice-President
J. C. Vick, Bryan	Second Vice-President
R. W. Burleson, San Saba	Third Vice-President
F. J. Skeeler, College Station	Secretary-Treasurer
N. M. McGinnis, College Station	Assistant Secretary-Treasurer

On the following pages are given the names of all graduates of the College, with the courses of study pursued and the degrees obtained; their occupations and residences are also given as far as known. The alumni are requested to aid the Secretary of the Association in making the roll as accurate as possible. Each alumnus should send the Secretary a postal card at the opening of each session, giving his address and occupation.

From the opening of the College in 1876 to its reorganization in 1880, the studies were elective, and led to appropriate degrees. Degrees received in this interval are noted in the list of names.

From 1881 to 1887 there were two prescribed courses, the Agricultural and the Mechanical, but no degrees were given.

From 1888 to 1895 there were four prescribed courses leading to the degrees of Bachelor of Scientific Agriculture (B. S. A.); Bachelor of Civil Engineering (B. C. E.); Bachelor of Scientific Horticulture (B. S. H.); Bachelor of Mechanical Engineering (B. M. E.).

From 1895 to 1901 the four prescribed courses remained the same, but the degree in each was Bachelor of Science (B. S.), the particular course being specified in the diploma.

In 1901 the Horticultural course was merged with the Agricultural. In 1903 the course in Electrical Engineering was added; in 1904, the course in Textile Engineering; in 1905, the course in Architectural Engineering; in 1908, the course in Chemical Engineering; in 1909, the course in Architecture, making eight regular courses leading to the degree in Bachelor of Science (B. S.) in Agriculture, in Architecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Mechanical Engineering, in Electrical Engineering, in Textile Engineering.

The courses of study are indicated by the use of Roman numerals, as follows:

I. Agriculture.
II. Horticulture.
III. Mechanical Engineering.
IV. Civil Engineering.
V. Electrical Engineering.
VI. Textile Engineering.

VII. Architectural Engineering.
VIII. Chemical Engineering.
IX. Architecture.

Names of deceased alumni are marked with an asterisk.

ABBOTT, E. G., 1894, IV, Captain Coast Artillery, United States Army, Fort Wood, Bedloe's Island, N. Y.
ABBOTT, H. T., 1898, II, Bookkeeper, 4010 Cedar Springs, Dallas.
ABNEY, CARLTON C., 1905, IV, Bank Clerk, Lampasas.
ABNEY, G. R., 1906, IV, Civil Engineer, Bryan.
ABRAHAMS, J. E., 1900, III, Mechanical Engineer, New Braunfels.
*ABRAHAMS, M. L., 1903, III.
ACKER, L., 1902, IV, Civil Engineer, Calvert.
ADAMS, R. E., 1910, IV, Student State Medical College, 1416 Avenue G, Galveston.
ADAMS, A. S., 1895, IV, Engineer, Bryan.
ADAMS, F. L., 1892, I.
ADAMS, LEM, 1908, IV, Draftsman, Oregon Short Line, 424 S. Johnson Avenue, Pocatello, Idaho.
ADAMS, Q., 1912, VII, with Cravens & Cage, Houston.
ADAMS, T. A., 1908, VI, Manager South Texas Cotton Mills, Brenham.
ADICKES, C. F., 1910, IV, Junior U. S. Engineer, Interstate Building, Kansas City, Mo.
ADKISSON, W. T., 1910, IV.
*ADRIANCE, D., 1886, I. M. S., 1890, Bryan.
ADRIANCE, G. W., 1915, II, Orange Orchard, Osborne Camp, Riverside, Cal. Home Address, Bryan.
AGUAYO, N. A., 1904, III.
AHRENBECK, W. T., 1891, III, Minister, Huntsville.
AKERS, M. E., 1902, IV, Farmer, Stowell.
ALDWELL, R. E., 1909, V, Cashier, First National Bank, Sonora.
ALEXANDER, D. E., 1880, Fort Worth.
ALEXANDER, J. R., Jr., 1915, III, Navasota.
ALEXANDER, M. R., 1913, IV, Civil Engineer, Pacific Terminal Panama Canal, Balboa, C. Z.
ALEXANDER, R. L., 1902, IV.
ALLEN, F., 1906, V, Campbellton.
ALLEN, L. E., 1881, III, Manager Allen's City Drug Co., Marlin.
ALLEN, R. R., 1915, I, Guaranty State Bank of Palestine, 599 North Sycamore St., Palestine.
ALLEN, W. H., 1888, I, Physician and Surgeon, Marlin.
ALTGELT, E. J., 1892, IV, Real Estate, San Antonio.
ALTGELT, E. S., 1904, IV, Civil Engineer, San Antonio, Box 902.
AMSLER, L. D., 1889, III, Cashier Farmers' National Bank, Hempstead.
AMTHOR, A. W., 1895, IV, Civil Engineer for Brownsville Land and Irrigation Co., Brownsville.
ANDERSON, J. V., 1913, IV, Abilene.
ANDERSON, R. O., 1913, III, Westinghouse Machine Co., Pittsburg, Pa.
ANDERSON, W. D., 1890, I, Manager Ice Works, Waxahachie.
ANDREWS, V., 1884, III, Physician, Floydada.
APPERSON, R. S., 1913, V, care Crocker-Wheeler Co., Ampere, N. J.
ARMSTRONG, J. F., 1906, III, Mining, Guanajuato, Mexico, Box 33.
ARMSTRONG, M. F., 1882, III, Real Estate and Banking, Mission.
ARNESON, E. P., 1910, IV, Civil Engineer, care City Engineer's Office, San Antonio.
ARNOLD, E. C., 1906, III, Mining Engineer, Flat River, Mo.
ASHFORD, G. W., 1912, V, Assistant Superintendent of Construction for Stuart, James & Cooke, 1320 1-2 Quarrier St., Charleston, W. Va.
ASHTON, JOHN, 1906, I.
ASTIN, E. H., 1899, III, Banker, Bryan.
ATWELL, B. D., Jr., 1912, V, W. E. & M. Co., Hutchins.
ATWELL, C. S., 1912, IV, Surveyor U. S. Eng. Corps, Hutchins.
AYERS, E. L., 1914, II, Chief Inspector Orchards and Nurseries, State Dept. Agr., Austin.
BAADE, J. E., 1911, VII, Plasterer, Waco.
BACKUS, U. J., 1890, III, Farmer, Eagle Pass.
BAILEY, C. C., 1892, IV, Cashier First National Bank, Bartlett.
BAINES, H., 1906, V, Traffic Dept., S. W. Tel. and Tel. Co., Waco.
BAKER, H. K., 1914, V, Effic. Engineer, 424 East Fifth St., Freemont, Nebr.
BAKER L. A., 1910, V, Westinghouse Electric Co., 403 Whitney Ave., Wilkinsburg, Pa.
BAKER, J. J., 1879, Merchant, Homer, La.
BAKER, SEARCY, 1882, III, 2607 Chartres St., N. O.
BALL, B. C., 1914, I, Mansfield.
BALL, W. A., 1912, V, Ranchman, Sweden.
BALLARD, LUKE L., 1905, I.
BANKS, A. L., 1879, B. S., 1892, M. S., 1895, Professor of Mathematics, College of Industrial Arts, Denton.
BARCLAY, R. L., 1898, III, Contractor, Temple.
BARHAM, G. S., 1902, III, Physician, Nacogdoches.
BARHAM, R. E., 1903, IV, Engineer, Nacogdoches.
BARNES, G. W., 1911, I, Live Stock Specialist, University of Arizona, Tucson.
BARNES, R. M., 1898, III.

BARNES, S. E., 1899, DeLaval Separator Co., 165 Broadway, New York.
BARNITZ, R. B., 1912, VII, Army Officer, Fort Sam Houston, San Antonio.
BARRACO, V. A., 1915, I, Proprietor Houston Film and Supply Co., 502-3-4 Settegast Building, Houston.
BARWIS, I. G., 1910, VII, Architectural Engineer, Kirkland.
BASS, R. O., 1909, V. Electrician, Clifton.
BATTE, T. R., 1902, IV, Superintendent East Coast Oil Co., Apartado 125, Tampico, Mex. Home address, Bryan.
BAUER, F., 1904, III, Ginner, Burton.
BAUM, J. A., 1903, IV, Civil Engineer, Georgia.
BAYLOR, R. E., 1913, IV, Instrument Man, Panama Canal, Balboa.
BEALL, V. Z., 1908, IV, Student M. I. of Tech., 263 Newbury, Boston, Mass.
BEAN, B., 1907, IV, C. E., 1909, Civil Engineer, Los Angeles, Cal.
BEASLEY, W. G., 1914, I, Ranch Manager, Gregory.
BEAUREGARD, R. T., 1910, IV, Engineering Dept., 233 San Pedro Ave., San Antonio.
BEAZLEY, C. N., 1913, IV, Grapeland.
BECHERT, F. J., 1911, III, M. E., 1912, 1913, Ch. E., Assistant Examiner, U. S. Patent Office, 1814 Park Road, N. W., Washington, D. C.
BECKER, ADOLPH, 1905, I, Merchant, Brenham.
BECKMANN, A. E., 1915, I, San Antonio.
BEEMAN, T. R., 1903, IV, Locating Engineer, C., M. & St. P. R. R., 617 White Building, Seattle, Wash.
BEESLEY, T. J., 1908, III, Manager Rockdale Oil Co., Rockdale.
BEESLEY, W. S., 1892, IV, Merchant, Abilene.
BEILHARZ, W. E., 1903, Structural Engineer, Dept. of Arch., A. & M. College.
BELL, J. E., 1915, IV, Luling.
BELL, T. L., 1915, IV, U. S. Surveyor, Murphy, Miss. Home Address, Dallas.
BENJAMIN, J. W., 1905, IV, City Engineer, Cuero.
BENTLEY, C. N., 1910, V, Northern Electric Co., Montreal, Canada.
BERNAY, C. L., 1904, IV, Contractor, 1008 Union National Building, Houston.
BEYER, F. C., 1892, III, Manager Mason Ice and Power Co., Mason.
*BIBERSTEIN, F. R., 1882, III.
BIERING, S. R., 1902, IV, Chief Claim Clerk, G., C. & S. F. Ry., Galveston.
BIGGERS, C. A., 1914, V, Teacher of Manual Training, Mineral Wells.
BING, B. L., 1910, I, Farmer, Waller.
BIRK, R. A., 1913, IV, Transitman, Panama Canal. Box 239, Christobal, C. Z.
BITTLE, P. B., 1896, I, Superintendent City Schools, Henderson.
BITTLE, T. C., JR., 1900, IV, Farming, Texarkana.
BITTLE, A. W., 1894, I, Principal High School, Washington, La.
BIVINS, M., 1907, V, Mattress Manufacturer, Longview.
BLACK, M., Minister, Sterling City.
BLACK, R. S., 1907, IV.
BLACKALLER, G. A., 1911, I, Stockman, Pearsall.
BLACKMON, G. H., 1910, Waxahachie Nursery Co., 1627 Elm St., Dallas.
BLAKE, H. H., 1907, IV, Markham.
BLAKE, T. W., 1904, I, Gen. Sales Mgr. South Texas Lumber Co., Houston.
*BLAKEMORE, T. E., 1880.
BLAND, L. F., 1899, I, Medical Student, Memphis, Tenn.
BLEDSOE, F. F., 1880, Minister, 1907 Brackenridge St., Austin.
BLOCK, J. A., 1912, IV, Houston.
BLOOR, A. W., 1895, I, Attorney, Austin.
BLOUNT, S. L., 1896, I, U. S. Veterinary Inspector, Bureau of Animal Industry, Department of Agriculture, 913 W. Lenda St., Fort Worth.
BOCOCK, J. H., 1894, I, Traveling Salesman, Thaxton, Va.
BOETTCHER, R. B., 1900, III, Cashier Union State Bank, East Bernard.
BOGEL, W. W., 1907, V, Ranchman, Valentine.
BORCHERT, W. C., 1913, IV, Instrumentman H. & T. C., Ennis.
BORN, THOMAS C., 1905, I, General Contractor, Corpus Christi.
BOURLAND, W. F., 1913, IV, Rodman S. A. & A. P. Ry. Co., 214 Bowie St., San Antonio.
BOWER, L. J., 1913, I, Stephenville.
BOWER, W. E., 1908, V, Farmer, Stephenville.
BOWLER, S. E., 1913, V, Fort Worth.
BOYCE, CHARLES, W., 1905, I, Farmer, Runge.
BOYCE, W., JR., 1907, IV, Roadmaster C. G. W. R. R., Chicago, Ill.
BOYETT, D. C., 1914, I, Bryan.
BOYETT, H., 1912, IV, Engineer Brazos River Levee, Bryan.
BOYKIN, R. E., 1892, III, Teacher.
BOZEMAN, J. R., 1912, V, Unsan, Korea.
BRADLEY, E. I., 1914, I, Dairy and Stock Farmer, Memphis.
BRANDT, R. L., 1906, III, Draftsman, Box 808, San Antonio.
BRANNIN, C. P., 1909, VI, Ex. Secretary The People's Church, 211 Odd Fellows' Hall, Cincinnati, Ohio.
*BRAUN, P., 1888, San Antonio.
BRAUNIG, H. E., 1914, V, Hereford Light and Power Co., Hereford.
BRAUNIG, V. H., 1910, V, Asst. Supt. Elect. Dept., San Antonio Gas and Elect. Co., San Antonio.
BRINKMANN, H., 1906, III, 1907, V, Comfort.
*BRITTINGHAM, W. F., Jr., 1890, IV.
BRETSCHNEIDER, W., 1898, IV, Assistant Superintendent M. of W. Dept., T. & N. O. R. R., Houston.
BREWER, H. A., 1899, III, Farmer, R. F. D. No. 3, Dale.
BRICE, H. A., 1910, IV, Contractor, 1301 Ames Trust Building, Birmingham, Ala.
BRISCOE, W. P., 1911, IV, City Engineering Dept., Houston.

BROGDON, S. T., 1908, III.
BROOME, W. S., 1914, IV, Memphis.
BROUN, T. R., Jr., 1915, I, Greenwood.
BROWDER, J. H., Jr., 1915, VI, Groesbeck.
BROWN, B. Mc., 1911, III, G., H. & S. A. Ry., El Paso.
BROWN, C., 1911, V, S. W. Tel. and Tel. Co., Dallas.
BROWN, C. G., 1906, V, Instructor, Sibley College, Ithaca, N. Y.
BROWN, H. P., 1911, I, Farmer, Mathis.
BROWN, J. F., 1913, V.
BROWN. J. J., 1912, I, Instructor Agriculture, Moore.
BROWN, L. W., 1915, I, Teacher in Arlington Training School, Arlington. Home Address, Mathis.
BROWN, R. M., 1901, IV.
BROWN, T. H., 1879, Claim Agent T. & N. O. Ry., T. P. Building, Houston.
BROWN, W. H., 1880, IV, Planter, Navasota.
BRUCE, E. L., 1894, IV, House of Representatives, Austin.
BRUNDRETT, G. T., 1908, V, with Stone & Webster, Dallas.
BRUNDRETT, H. McE., 1914, II, Instructor in Entomology, College Station.
BRYAN, B. F., 1897, I.
BRYAN, W. I., 1900, II, Chief Engineer Flour Mills, Celina.
BRYANT, W. T., 1911, VIII, Ch. E., 1913, Asst. in Chemistry, College Station.
BUCHANAN, T. S., 1909, IV, Resident Engineer, F. F. C. C. N. of Mex., Ajono, Kilo, 110 Michoacan, Mexico.
BUCKMAN, C. D., 1889, IV, Denison Grocery Co., Denison.
BUCKNER, J. F., 1912, IV, City Engineer, Cleburne.
BUFORD, F. L., 1892, IV.
BUGBEE, J. S., 1915, I, Clarendon.
BUHLER, C. M., 1897, III, Public Accountant, Victoria.
BUHLER, C. W., 1892, IV, Chief of Car Department, S. A. & A. P. Ry., San Antonio.
BUHLER, W. A., 1900, III, Manager Park Garage, Victoria.
BULLARD, T. O., 1899, III, Machinist T. & N. O., 1507 Congress Ave., Houston.
BURCK, L. B., 1889, IV, Broker, 631 S. Spring St., Los Angeles, Cal.
BURFORD, J. M., 1882, III, Physician and Surgeon, Independence.
BURCHARD, C. L., 1886, III.
BURCHARD, S. H., 1915, IV, Abstractor, Gonzales.
BURGES, A. E., 1915, I, Commercial Secretary, Ballinger. Home Address, Weatherford.
BURGOON, C. E., 1895, III, M. E., 1899.
BURLESON, R. C., 1912, IV, 1st Lieutenant, U. S. Army, Fort Myer, Va.
BURLESON, R. W., 1895, III, Cashier City National Bank, San Saba.
BURLESON, W. H., 1913, V, Texas Power and Light Co., Dallas.
BURMEISTER, C. A., 1908, I, U. S. Dept. of Agriculture, Washington, D. C.
BURNEY, J. W., 1896, III, Lumberman, Kerrville.
BURNEY, R. L., 1906, IV, General Contractor, 416 Conroy Bldg., San Antonio.
BURNS, A. C., 1907, I, Veterinary Surgeon, Cleburne.
BURNS, H. E., 1906, IV, Draftsman Colorado Southern R. R., Beaumont.
BURNS, J. C., 1904, I, Professor of Animal Husbandry, College Station.
BURRITT, W. P., 1906, III, Supt. Mines, Ceralvo, Hda. Benevides, Nuevo Leon, Mex.
BURT, F. O., 1910, IV, Contractor, Waco.
BURTON, A., 1913, VII, Instructor in Architecture, College Station.
BUTLER, J. V., 1912, IV, Draftsman Santa Fe R. R., Amarillo.
BYARS, G. E., 1910, IV, Supt. Buildings and Grounds, College Station.
CABANISS, W. M., 1912, V, Draftsman Texas Portland Cement Co., Houston.
CADE, K. C., 1913, IV, Birkville.
CAIN, R. W., 1913, IV, Cotton Factor, Italy.
*CALDWELL, J. C., 1883, III.
CALDWELL, J. R., 1912, III, Student M. I. T., 6 Blackwood St., Boston, Mass.
CALDWELL, R. E., 1913, I, Corpus Christi.
CALLAWAY, W. H., 1912, IV, Supt. of Constr., Bridges and Dams, Santa Gertrudis Ranch, Kingsville.
CAMP, G. D., 1914, IV, Student M. I. T., Boston, Mass. Home Address, 310 E. Elmira St., San Antonio.
CAMPBELL, A. R., 1915, I, Plano.
CAMPBELL, D., 1879, Stockman, El Paso.
CAMPBELL, P., 1913, V, Weatherford.
CAMPBELL, R. W., 1899, III.
CARDWELL, W. W., 1913, I, Stock Farmer, Lockhart.
CARLIN, W. J., 1910, III, Draftsman City Engineer's Office, Houston.
CARLISLE, E., 1906, I, Chemist, 56 Suburban Ave., Stamford, Conn.
CARPENTER, M. M., 1902, I, Mining Engineer, 66 Scott St., Tucson, Ariz.
CARRINGTON, H., 1912, IV, Civil Engineer, Bay City.
CARROLL, J. G., 1911, V, Westinghouse E. and M. Co., 405 Biddle Ave., Wilkinsburg, Pa.
CARSON, A. B., 1897, IV, Civil Engineer, Bryan.
CARSON, J. M., Jr., 1886, I, Miraco Co., Dallas.
CARSON, J. W., 1886, I, Director Harris County Demonstration Farms, Houston.
CARSON, R. C., 1899, III.
CARSON, W. W., Jr., 1915, V, Sherwood.
CARTER, J. D., 1900, IV, Civil Engineer, 905 Main St., Dallas.
CARTER, J. W., Civil Engineer, El Paso.
CARTER, T. H., 1912, V, Celeste.
CARTER, W. T., Jr., 1898, I, Scientist in Bureau of Soils, Washington, D. C.
CARUTHERS, F., 1885, I.
CARUTHERS, R. B., 1912, IV, Instrumentman S. A. & A. P. Ry., Box 236, Yoakum.

CASEY, P. D., 1908, VI, S. W. Tel. and Tel. Co., Dallas.
CAVEN, G. P., 1897, I.
CAVITT, J. S., 1911, V, Westinghouse E. and M. Co., 413 Pitt St., Wilkinsburg, Pa.
CAVITT, W. H., III, Oil Well Contractor, Box 101, Batson.
CAWTHON, F. W., 1915, IV, Rodman G., C. & S. F. R. R., care M. F. Temple, Galveston.
CELY, H. M., 1910, V, Teacher, Frankston.
CHAMBERS, M. L., 1879, Real Estate and Loans, 709 1-2 Main St., Fort Worth.
CHAMBERS, T. L., 1913, V, with Western Elec. Co., Hawthorn, Chicago.
CHANEY, L. P., 1912, V, Texas City Trans. Co., Texas City.
CHERRY, T. G., 1915, I, Post Graduate at A. & M. College. Home Address, Giddings.
CHEWNING, J. W., 1913, I, Chemist Southland Cotton Oil Co., Paris.
CHINSKI, C. C., 1913, IV, Wholesale Grain, Beaumont.
CHRISTEN, J. C., 1912, V.
CHRISTIAN, B. H., 1910, IV, Lumber and Mine Timbers, Box 893, Warren, Ariz.
CHRISTIAN, J. R., 1911, IV, VIII, 1913, Secretary Industrial Gravel Co., Houston.
CHURCH, MARION S., 1905, I, Attorney, Dallas.
CHURCH, W. G., 1912, V, General Electric Co., Schenectady, N. Y.
CLARK, H., 1895, I, Physician, Crowell.
CLARK, S. F., 1915, I, Farmer, Hico.
CLARKSON, W. C., 1915, V, San Antonio.
CLAYTON, W. D., I, M. S., 1897.
CLAYTOR, E. McR., with Westinghouse E. and M. Co., 705 Lamar Ave., Wilkinsburg, Pa.
CLEMENT, C. B., 1914, VII, Port Lavaca.
CLEMENT, T. H., Jr., 1900, IV.
CLONTS, T. P., 1904, IV, City Engineer, Muskogee, Okla.
COBBS, S. A., 1896, IV.
COBBS, T. D., Jr., 1904, IV, Attorney at Law, 716 Brady Building, San Antonio.
COCHRAN, E. G., 1879, Physician and Surgeon, Pearsall.
COCHRAN, J., 1904, IV, C. E., 1905, General Contractor, 305 First National Bank Building, Houston.
COCK, C. E., 1911, IV, Superintendent Road Construction, McKinney.
COGHILL, E. S., 1911, IV, U. S. Gov. Engr. Corps, 3502 McKinney Ave., Dallas.
COHN, S. L., 1897, IV.
COLE, A. T., 1909, V.
COLEMAN, M. M., 1910, I, Ranchman, Rodger, N. M.
COLEMAN, N. P., 1911, III, Lineman Bryan Tel. Co., Bryan.
COLEMAN, W. C., 1915, I, Student Vet. Med. Ohio State Univ., 192 W. Eighth St., Columbus, Ohio. Home address, Athens.
COLLINS, J. A., 1907, V, Louisiana Creosoting Co., Winnfield, La.
COLLINS, J. C., 1915, I, Channing.
COLLINS, J. W. H., 1913, VI, Farmer, Mexia.
COLLINS, A. B., 1912, V, Inspecting Eng. Elmhurst, N. Y.
CONNELLEE, E. T., 1913, I, Eastland.
CONNER, A. B., 1904, I, Agronomist for Texas Experiment Station, College Station.
CONNER, T. P., 1912, I, Red Oak.
COOK, E. A., 1892, III, Cleburne.
COPELAND, A. B., 1915, II, Teacher Clebarro College, Cleburne. Home Address, Stephenville.
CORLETT, R. H., 1911, IV, Civil Engineer for Producers' Oil Co., Wichita Falls.
CORNELL, A. L., 1908, IV, Auditor M., K. & T. Ry. Co., Denison.
COTTINGHAM, I. A., 1886, III, Assistant General Manager H. & T. C. Ry., 2811 Fannin St., Houston.
COTTINGHAM, W. P., 1892, IV, Manager Texas Blue Print and Supply Co., Houston.
*COTTON, H., 1897, IV.
COUCH, E., 1897, III, Engineer Concrete Constr., Klein Bros. Co., Dallas.
COULTER, H. T., 1895, II, Physician, Rockdale.
COULTER, W. J., 1895, III, Merchant, Bryan.
*COULTER, R. E., 1901, III.
COURTNEY, O. K., 1914, I, Asst. Entomologist to Experiment Station, College Station.
COUSINS, R. W., 1899, III, Electrical Eng. Ind. Steel Co., Gary, Ind.
COWART, I. E., 1913, I, Assistant Professor of Horticulture, College Station.
COX, W. D. S., 1892, IV.
COX, H. T., 1912, V, Power and Light Co., Hereford.
COX, R. W., 1913, I, Post Graduate Iowa State College, Ames, Iowa.
COZART, R. B., 1911, III, Asst. Superintendent Lufkin Foundry and Iron Works, Lufkin.
CRAVENS, J. R., 1882, III, General Agent Fire Insurance, Houston.
*CROCKETT, C. M., 1910, IV.
CROCKETT, J. B., 1908, IV, C. E., 1909, Assistant County Engineer, McKinney.
CROUCH, J. H., 1910, V, Salesman, Alvin.
CROW, W. E., 1898, II, Physician, Dallas.
CROWN, P. T., 1915, IX, Architect, 321 N. Eleventh St., Waco.
CRUM, J. B., 1911, VII, Ford Motor Co., Dallas.
CRUSE, JOHN T., 1905, I, Farmer and Teacher, Calhoun.
CULBERTSON, J. L., 1913, I, Farmer, Hamlin.
CULVER, DAN, 1908, III, Salesman, Lampasas.
CUNNINGHAM, F. H., 1910, V, Local Manager Otis El. Co., El Paso.
CUNNINGHAM, A., 1879, Railway Postal Clerk, Palacios.
CUNNINGHAM, P. E., 1907, IV, Junior Engineer Mississippi River Commission, Box 424, Vicksburg, Miss.
CURTIN, W. H., 1912, III, City Eng. Dept., Houston.
CUSHING, D., 1891, III, Pharmacist, Yorktown.
CUSHING, E. B., 1880, III, C. E., 1899, Chief Engineer Construction Sunset-Central Lines, 904 Southern Pacific Building, Houston.

DAHME, A. F., 1904, IV, Engineer, Yorktown.
DALE, I., 1908, IV, Junior Railway Engineer with Interstate Commerce Commission, Thirteenth and Locust Sts., Kansas City, Mo.
DALE, J., 1908, III, 330 E. Sixth St., Oklahoma City, Okla.
DALLMEYER, C. D., 1911, VI, with Swift Mfg. Co., Columbus, Ga.
DARST, T. B., 1911, I, Stock Raising and Ginner, Richmond.
DASHIELL, W. R., 1891, IV, Physician, Surgeon for the Victor Fuel Co., Gray Creek, Col.
DAVENPORT, H. S., II, Agriculturist, 2 Crawford St., Palestine.
DAVIS, C. J., 1915, I, Corsicana.
DAVIS, DEAN, 1915, V, Bush Electric Co., Galveston. Home Address, Dawson.
DAVIS, D. O., 1911, I, Farming, McKinney.
DAVIS, J. M., 1903, IV, Banker, Forney.
DAVIS, J. N., 1885, III, Farming and Stock Raising, Hico.
DAVIS, J. N., Jr., 1913, IV, Transitman, Balboa, C. Z.
DAVIS, T. C., 1914, IV, Civil Engineer, care Y. M. C. A., Ennis.
DAVIS, S. F., 1915, I, Teacher of Agr. in High School, Fowlerton. Home Address, Box 305, San Antonio.
DAWSON, N. A., 1884, Lawyer, Austin.
DAY, T. R., 1902, I.
DAZEY, W. L., 1894, IV, Dentist, Hillsboro.
DEAN, J. S., 1906, VII, Architect, State Architect's Office, Sacramento, Cal.
DELLIS, J. L., 1912, IV, Draftsman Pacific Electric Ry. Co., Los Angeles, Cal.
DE LONG, R., 1915, III, Mexia.
DENTON, V. C., 1915, IV.
DEVINE, P. S., 1912, IV, Laredo.
DIBRELL, Z. H., 1910, V.
DICKERSON, A. F., 1910, V, Gen. Elec. Co., Illuminating Engr. Lab., Schenectady, N. Y.
DICKERSON, W. E., 1911, IV, General Eng. Practice, Cuero.
DICKIE, B. H., 1915, V, Electrician for Texas City Power and Trans. Co., Texas City. Home Address, Woodson.
DICKSON, J. L., 1912, IV, Asst. Eng. Freeport T. Wn. Co., Velasco.
DICKSON, R. E., 1912, I, Superintendent Experiment Station Spur.
DIETERT, R. H., 1888, III.
DINTER, H. A., 1911, V, Electrician Central Texas Power and Trans. Co., Hico.
DODSON, A. E., 1915, I, Petersburg.
DODSON, C. P., 1911, V, Manager Light Plant, Sanger.
DONALDSON, C. B., 1893, III, Farmer, Kyle.
DONOHO, W. T., 1913, IV, 111 Loretta Place, San Antonio.
DORSEY, W. L., 1911, V, Head Eng. Dept. Peacock's Military College, San Antonio.
DOWELL, H. B., 1913, I, Collin County National Bank, McKinney.
DOWNS, J. R., 1879, Lawyer, Waco.
DOWNS, P. L., Vice-President First National Bank, Temple.
DRIESS, E., Jr., 1913, VI, San Antonio.
DRISDALE, W. E., 1889, II, Physician and Surgeon for Victor-Amer. Fuel Co., Gray Creek, Col.
DROSS, P. H., 1902, III, General Manager F. Marty Foundry Co., Meridian, Miss.
DUDLEY, F. E., 1885, II, Real Estate and Insurance, 7426 Sunset Boulevard, Los Angeles, Cal.
*DUGAN, G. H., 1881.
DUGGAN, A. P., 1895, IV, Manager Littlefield Lands, Littlefield.
DUNN, R. B., 1904, III, Merchant, Benchley.
DUNNING, G. R., 1915, VIII, Chemist for Portland Cement Co., Dallas. Home Address, Gonzales.
DURST, BRUNO L., 1905, IV.
DWYER, T. J., 1912, IV, International Boundary Com., El Paso.
DWYER, W. F., 1899, I.
EAGLESTON, E. G., 1913, I, Asst. Cashier First National Bank, Smithville.
EGAN, J. T., 1913, I, County Agent, Seymour.
EDDINS, R. R., 1909, V, Electrician, Marlin.
EDSALL, A. B., 1907, I, Farmer, Spring Creek.
EDWARDS, J. F., 1883, III.
EBERSPACHER, F., 1906, IV, Retail Stationer, 221 N. Twentieth St., Birmingham, Ala.
EBERSPACHER, G., 1896, III, Machinist S. P. Ry., Houston.
EBERSPACHER, R., 1901, III, Electrician Sunset-Central Lines, 1620 Gano St., Houston.
EHLERS, P., 1907, V.
EHLERS, V. M., 1905, State Sanitary Engineer, Austin.
EHLERS, W. J., 1910, VII, Architect, Wentz.
EHLINGER, G. E., 1912, I, La Grange.
EHLINGER, L., 1906, IV, Draftsman General Land Office, Austin.
EHLINGER, R. B., 1913, I, Deputy State Feed Inspector, College Station.
EHRHARDT, E. J., 1910, IV.
EILAND, E. R., 1915, I, Bank Clerk, Rochester. Home Address, Rockdale.
*ELDRIDGE, H. M., 1897, IV.
ELLIOTT, J. E., 1910, VII.
ELLIOTT, F. G., 1906, VI, with Bush & Witherspoon, Cotton Brokers, Waco.
ELLIS, H. E., 1910, V.
ELLIS, H. F., 1915, I, First Asst. Cashier F. and M. Bank, Abbott.
ELLIS, B. V., 1892, I, Physician, 1515 Boulevard St., Houston.
ELLIS, FORT O., 1894, IV, Sheriff and Tax Collector, Harrisonburg, La.
ELLIS, O. L., 1908, V, S. W. Tel. and Tel. Co., 2015 Bennett Ave., Dallas.
ELROD, H. E., 1901, III, Consulting Engineer, S. W. Life Bldg., Dallas.
ENGLISH, M. G., 1909, IV, Civil Engineer, Port Arthur.

EPPLER, H. G., 1912, V, Cisco.
EPPRIGHT, F. G., 1902, III.
EPSTEIN, S. G., 1907, IV.
ERHARD, E. C., 1903, III, Machinist I. & G. N. R. R. Co., Palestine.
EUDALY, E. R., 1910, I, Stockman, Fairy.
EVANS, C. D., 1899, IV, Civil Engineer, Shreveport, La.
EVANS, C. M., 1908, I, Superintendent Agricultural Extension Dept., College Station.
EVERETT, G. D., 1915, II, Teaching, Brenham. Home Address, Dallas, care Dallas News.
EVERSBERG, E. A., 1913, I, Asst. Manager Armour & Co., Brenham.
EVERSBERG, O. L., 1910, I, with National Biscuit Co., Houston.
FABER, B. H., 1915, IV, Rodman and Chainman Interstate Commerce Commission, Thirteenth and Locust Sts., Kansas City, Mo.
FAIRBAIRN, G. C., 1912, V, Port Arthur Light and Power Co., Port Arthur.
FARMER, A. G., 1895, III, Stockman, Junction.
FARMER, J. S., 1912, I, Stock Farmer, Route 7, Box 25, San Antonio.
FARTHING, W. E., 1914, IV, Valley View.
FAUST, H., 1900, III, First National Bank, New Braunfels.
FAUST, W., 1897, IV, Cashier First National Bank, New Braunfels.
FEARHAKE, J. D., 1889, IV, Attorney, 60 Broadway, New York.
FEHRENKAMP, E. B., 1901, IV, Bookkeeper, Kenedy.
FERGUSON, A. M., 1894, II, M. S., 1896, Pres. and Gen. Mgr. Ferguson Seed Farms, and Prop. Ferguson Publishing Co., Sherman.
FIELD, H. Y., 1891, I.
FIGH, J. R., 1912, I, Stock Farmer, Canyon.
FINNEY, C. B., 1896, IV, Mining Engineer, Apartado 173, Oax., Mexico.
FISHER, J. K. G., 1914, I, Asst. Hog Buyer, 1612 Belmont Ave., Fort Worth.
FITZGERALD, A. H., 1895, I, Druggist, Gonzales.
FITZGERALD, L., 1900, III, Vice-President G. H. L. & W. Co., Gary, Ind.
FITZHUGH, E. E., 1880, Real Estate, Waco.
FITZPATRICK, B., 1913, IV, Columbus.
FLEMING, C. H., 1908, VI, Cisco.
FLOYD, J. F., 1892, III, Lumber Dealer, Texarkana.
FLYNT, H. C., 1890, I, Real Estate, 810 Gunter Bldg., San Antonio.
FORD, F. D., 1911, IV, Cordell, Okla.
FORDTRAN, F. L., 1887, I, Physician, Kerrville.
FORSGARD, C. H., 1911, V.
FORSGARD, OSCAR L., 1905, IV, Civil Engineer, 3618 San Jacinto St., Houston.
FORSYTH, J. M., 1912, III, 1913, M. E., with Allis-Chalmers, West Allis, Wis.
FORT, F. W., 1879, Wholesale Grain, Provident Bldg., Waco.
FOUNTAIN, E. J., Jr., 1913, VII, Student Harvard Law School, 64 Oxford St., Cambridge, Mass. Home Address, Bryan.
*FOUNTAIN, S. J., 1901, IV.
FOUNTAIN, T. D., 1904, IV, Merchant, Dalhart.
FOUNTAIN, T. L., 1901, IV, Engineer of Sewerage, City Engineer's Office, Dallas.
FOURAKER, L. L., 1914, V, Dallas.
FOURAKER, R. S., 1914, V, Western Electric and Manufacturing Co., Dallas.
FOUTREL, G. F., 1898, III, Foreman Warehouse, 225 S. Presa St., San Antonio.
FOWLER, E. G. R., 1894, IV.
FOY, H. F., Jr., 1908, V, Field Engineer Interstate Commerce Commission, 601 Interstate Bldg., Kansas City, Mo.
FOY, V. H., 1902, III, S. W. Tel. and Tel. Co., Pine Bluff, Ark.
FRANCIS, A. J., 1912, I, College Station.
FRANCIS, W. B., 1915, I, Student Cornell University, 105 Harvard Place, Ithaca, N. Y. Home Address, College Station.
FRANCISCO, E. O., 1915, IV, C. E. Dept., College Station.
FRAZIER, B., 1911, I, Electrician, 617 South Third St., Waco.
FREEMAN, J. H., 1887, III, Insurance Agent, Austin,
FRENCH, W. A., 1913, IV, Grocer, Kaufman.
FRIES, JOHN, 1912, IV, City Engineer's Office, 139 Cedar St., San Antonio.
*FULLER, T. A., 1879.
FURNEAUX, W. H., 1909, I, American Exchange National Bank, Dallas.
GAMMILL, H. H., 1915, I, Bryan.
GARBADE, W. T., 1901, Adjunct Professor University of Texas, Medical Dept., Galveston.
GARNETT, R. M., 1902, IV, Section Foreman S. P. Ry., Bay City.
GARZA, C. M., 1905, IV, Brownsville.
GEREN, P. M., 1912, VII, Architect, Austin.
GIBBENS, E., 1914, I, Kerrville.
GIESECKE, A. C., 1909, IV, with W. A. Kraner Construction Co., Chamber of Commerce Bldg., Portland, Ore.
GIESECKE, B. E., 1911, VII, Architect, Austin.
GIESECKE, F. E., 1886, III, M. E., 1890, Professor of Architecture, University of Texas, Austin.
GIESECKE, G., 1884, III, Merchant Miller, 228 Washington St., San Antonio.
GIESECKE, W. E., 1892, III, New York City.
GILBERT, C. L., 1911, V, U. S. Army, Fort Adams, R. I. Home Address, Smithville.
GILBERT, J., 1894, I, Physician, Austin.
GILBERT, W. A., 1907, I, Farmer, Mabank.
GILBERT, W. R.
GILLESPIE, S. E., 1903, III, Draftsman, The Murray Co., Dallas.
GILLESPIE, W. S., 1915, IV, Draftsman A. T. & S. F. R. R., 605 W. Sixth St., Topeka, Kan.
GILLETTE, P. C., 1913, IV, Civil Engineer, Panama Canal, Balboa, C. Z.

GILMORE, H. C., 1896, III.
GIRADEAU, E. R., Jr., 1915, II, Galveston.
GIST, BYRON, 1910, I, Stock Farming, Littlefield.
GIST, W. B., 1913, IV, Panama Canal, Paraiso, C. Z.
GLASS, R. H., 1904, III, Dentist, Hearne.
GLASS, WILL V., 1905, I, Druggist, Lufkin.
GLEASON, B., 1906, V, Postmaster, Hico.
GLEASON, H., 1903, IV, Manager Hico Light and Power Co., Hico.
GLOVER, W. F. H., 1898, I, Planter, R. F. D. 1, Box 14, Charleston, S. C.
GOLDBERG, I. L., 1896, II, Merchant, Jefferson.
GONZALES, J. de la M., 1913, IV.
GOODWIN, J. C., 1914, I, Chief Clerk State Plant Board of Florida, Gainesville, Fla.
GOODWIN, W. M., 1912, V, Western Electric Co., Cicero, Ill.
GRADY, M. L., 1909, IV.
GRANAU, H. F., 1907, IV, Merchant Bellville.
*GRAVES, C. S., 1882, III.
GRAVES, D. R., 1903, III.
GRAY, J. L., 1884, III, Civil Engineer.
*GRAY, O. H., 1911, V.
GREEN, C. E., 1912, V, General Electric Co., Schenectady, N. Y.
GREEN, ROY, 1914, I, Farmer, Floydada.
*GREEN, R. B., 1884, III.
GREENE, O. W., 1915, I, Science Teacher High School, Gatesville. Home Address, Comanche.
*GREENWOOD, F. J., 1898, IV.
GRIESENBECK, C. H., 1912, VII, Architect, 1101 S. W. Life Bldg., Dallas.
GRIFFITHS, T. W., Jr., 1900, III, with Griffiths & Co., Lumber Dealers, Dallas.
GRISCOM, R. J., 1913, IV, Professor of Mathematics B. B. A., Bryan.
GROGINSKI, P., 1914, V, Post-Graduate A. and M., Bryan.
GROTE, F. H., 1911, I, Farmer, Mason.
GRUENE, E., 1887, III, Piano Dealer, New Braunfels.
GRUPE, G., 1892, III, Superintendent Water Dept., City of Cleburne.
*GUGENHEIM, L. Z., Jr., 1906, V, E. E., 1907.
GURLEY, D. R., Jr., 1892, Farmer, Waco.
HACKNEY, J. G., 1906, III, Merchant, Stamford.
HAILE, C. R., 1912, IV, San Antonio.
HADEN, J. H., 1879, Farmer and Stockman, R. F. D. No. 2, Barry.
HALL, G. G., 1913, I, Houston.
HALLER, C. F., 1915, I, Farmer, Victoria.
HALTOM, G. T., 1906, V.
HANER, E., 1904, IV, Division Engineer Natl. R. R. of Mexico, Gomez Palacios, Mexico.
HANNA, HOWARD E., 1905, I, Traveling Salesman Hughes-Percell Paint Co., Kansas City, Mo.
HANSCHKE, R., Jr., 1890, III.
*HARE, H. C., 1887, III.
HARE, S. C., 1882, III, Lawyer, 566 S. Travis St., Sherman.
HARRINGTON, C. B., 1902, I.
HARRISON, C. C., 1899, II.
HARRISON, E. W., Jr., 1913, I, Farmer, Greenville.
HARRISON, J. C., 1914, III, Stockdale.
HARRISON, J. G., 1902, III, Architect, Wilson Bldg., Dallas.
*HARRISON, W. A., 1898, II.
HARRIS, D. B., 1909, IV, Bank Clerk S. Texas Com. Natl. Bank, Houston.
HAUCK, CHARLES F., 1905, III.
HAWKINS, J. W., 1893, I, General Land Office, Austin.
HEIDELBERG, H. A., 1903, III.
HEFNER, W. J., 1913, V, with General Electric Co., Schenectady, N. Y.
HELDENFELS, C. A., 1903, I, Lumber Dealer and Architect, Beeville.
HELDENFELS, F. W., 1909, VII, Lumber Dealer and Architect, Beeville.
HELLER, J. H., 1913, I, Manual Training and Military Science, Masonic School, Fort Worth.
HELLER, W. L., 1908, I, Wholesale Florist, R. F. D. No. 1, Alvin.
HEMPHILL, G. H., 1912, V, Otis Eelevator Co., Houston.
HENDERSON, C. M., 1911, I, Broker, 512 Sumpter Bldg., Dallas.
HENDERSON, H. W., 1891, I.
HENSEL, F., Jr., 1907, I, Associate Professor of Horticulture, College Station.
HEREFORD, J. B., 1887, III, General Agent Fire Insurance, Dallas.
HERNSTADT, S. J., 1890, IV, Member New York Cotton Exchange, 60 Broadway, N. Y.
HERRINGTON, J. J., Jr., 1914, III, Asst. Supt. Buckeye Cotton Oil Co., Selma, Ala.
HIGGINS, W. S., 1907, IV, Roadmaster G., H. & S. A. Ry., Victoria.
HILDEBRANDT, A. M., 1896, II, M. S., 1898, Minister, Sewanee, Tenn.
HILL, JOHN E., Jr., 1904, III, 1905, V, E. E., 1907, Bell Tel. Co., Waco.
HILL, J. R., 1913, IV, Inspector Road Construction, Terrell.
HILL, M. J., 1907, V.
HILL, S. S., 1914, V, Student Engineer, 209 Woodlawn Ave., Pittsfield, Mass.
HOEFLE, K. F., 1912, IV, Amalgamator, Unsan, Chosen, Japan.
HOEPFNER, F. W., 1914, I, Hog Ranch, Dairy and Beet Feeding, Taft.
HOFFER, T. B., 1904, IV, Division Engineer Producers Oil Co., Wichita Falls.
HOFFMAN, F. C., 1888, III, Jeweler, New Braunfels.
HOFMAN, R. W., 1906, IV, Merchant, Mason.
HOGUE, E. N., 1915, V, Apprentice W. E. & Mfg. Co., 708 Lamar Ave., Wilkinsburg, Pa.
HOHN, CAESAR, 1912, I, M. S., 1914, Manager Pease Ranch, Corpus Christi.
HOLCOMB, R. M., 1902, Clerk Auditor's Office, P. E. Ry. Lines, Los Angeles, Cal.

HOLLAND, C. J., 1913, VIII, Brownwood.
HOLLOWAY, L. E., 1915, I, Dallas.
HOLLOWAY, T. E., 1908, I, U. S. Department of Agriculture, New Orleans, La.
HOLMAN, J. R., 1895, IV, Chief Engineer Oregon & Washington R. R., Seattle, Wash.
HOLZMAN, F. R., 1902, I.
HOLZMAN, WALTER R., 1905, I, Veterinary Inspector, B. A. I., Lubbock.
HOMANN, A. C., 1898, III, Banker, Ballinger.
HOMANN, F. A., 1915, III, Heating Draftsman, 606 Preston Ave., Houston.
HOMEYER, C. W., Jr., 1908, IV, Engineer Medina Irrigation Co., Lytle.
HOOKER, R. M., 1910, I, Farming, Tyler.
HOOPER, J. J., 1901, I, Professor of Animal Husbandry, Kentucky State College, Lexington, Ky.
HOPKINS, S. H., 1890, I, Attorney, Gonzales.
HORN, T. L., 1899, III, Machinist I. & G. N. Shops, Palestine.
HORTON, C. K., 1909, IV, Civil Engineer for Horton & Horton, Houston.
HOUGH, S. A., 1885, III, County and District Clerk, Rock Springs.
HOUSTON, F. N., 1894, IV.
HOWELL, J. W., 1894, I, President and Manager Bryan Cotton Oil Co., Bryan.
HOWELL, R. W., 1896, I, Cashier First National Bank, Bryan.
HOYO, G. A., 1906, I, Superintendent and Special Disbursing Agent Int. Dept, Otoe, Okla.
HUDGINS, F. D., 1897, IV, General Superintendent Jas. C. Travilla Co., Fort Worth.
HUDGINS, L. A., 1913, VIII, Chemist, 808 1-2 Main Street, Dallas.
HUDSPETH, C. C., 1915, V, Hondo.
HULL, B. E., 1904, IV, Chief Engineer Refining Department Texas Co., Houston.
HUNT, N. H., 1912, V, Chapman Engineering Co., Texas City.
HURDLE, E. F., 1915, IV, Draftsman, Continental Oil and Gas Co., Box 578, Bartlesville, Okla.
HUTCHINSON, E. W., 1889, IV, Secretary-Treasurer Moore-Cortes Canal Co., Houston.
HUTCHINSON, O. D., 1893, I.
HUTCHINSON, W. F., 1897, IV, Bank Cashier, Winter Haven, Fla.
HUTH, T. G., 1912, III, Proprietor Huth Seed Co., San Antonio.
HUTSON, A. C., 1900, IV, Engineer Natl. Bd. Fire Underwriters, 76 William St., New York City.
HUTSON, H. L., 1896, III, Secretary A. M. Lockett & Co., Ltd., 721 Lowerline St., New Orleans, La.
HUTSON, W. F., 1895, IV, Assistant Supt. H. E. & W. T., Houston.
HUTSON, M. B., 1909, V, Salesman Electric Appliance Co., 7321 Panola St., New Orleans, La.
HYNDS, H. G., 1910, V, Texas City Ter. Co., Texas City.
INGRAM, H. L., 1910, V, Supt. Sub-Stations, Texas Traction and Southern Traction Cos., Dallas.
IRBY, A. H., 1914, I, Asst. Veterinarian to Experiment Station, College Station.
ISBELL, J. M., 1903, IV.
ITZ, F., 1911, IV, on Construction of Concrete Bridges, Winkleman, Ariz.
*JACK, D. M., 1879.
JACKSON, J. W., 1913, I, Superintendent Experiment Station, Pecos.
JACOT, H., 1902, Merchant Mining Machinery, Apartado, 414, Mexico City.
JAHN, R. S., 1910, IV, Draftsman Sunset-Central Lines, Houston.
*JAHN, F. C., 1894, II.
JAMES, M. H., Jr., 1913, I, Citrus Canker Eradication Work, Houston. Home Address, Bryan.
JAMES, O. J., 1914, I.
JAPHET, G., 1894, III, Wholesale Fruit and Produce, 917 Commerce St., Houston.
JAPHET, W. E., 1904, IV, Civil Engineer Producers Oil Co., Houston.
JARVIS, J. R., 1915, VIII, Chemist Galveston Gas Co., 423 Thirty-second St., Galveston.
JENNINGS, A. L., 1914, III, Jennings Hardware Co., Kosse.
JENNINGS, J. W., 1911, I, Asst. Cashier Kirby Lumber Co., Bessmay.
JENSON, W. M., 1912, I, Ice Cream Mfg. Co., Durant, Okla.
JOBSON, H. H., 1908, I, U. S. Department of Agriculture, College Station.
JOBSON, T. S., 1903, III, Signal Supervisor G., H. & S. A. Ry., Box 553, Del Rio.
JOHN, J. R., 1910, IV, Draftsman Sunset Lines, Houston.
JOHNSON, M. L., 1912, V, Eng. of Con. A. L. & W. Co., Amarillo.
JOHNSON, T. L., 1912, I, Stockman, West Plains, Mo.
JOHNSTON, L. M., 1913, III, M. E., 1914.
JOHNSTON, T. J., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
JONAS, E. C., 1894, IV, Draftsman Resident Engineer's Office, G., H. & S. A. Ry., 1002 Avenue D, San Antonio.
JONAS, H. F., 1888, IV, Bridge Engineer Sunset Lines, Houston.
JONES, H. P., 1913, IV, Contracting Engineer, Kaufman.
JONES, C. E., 1908, I, Bookkeeper First National Bank, Bryan.
JONES, G. M., 1912, I, 2011 Canal St., New Orleans, La.
JONES, L. R., 1908, IV, Engineer Gulf Refining Co., Port Arthur.
*JONES, W. F., 1889, IV.
JONES, W. T., 1914, V, Sinton.
JOPLIN, J. F., 1913, I, Stock Farmer, Duster.
JORDAN, G. F., 1914, I, Feeding and Breeding Station, College Station.
JORDAN, H. P., 1895, IV, Attorney at Law, Waco.
JOSEY, N. L., 1888, I.
JOSSERAND, L. P., 1913, VII, Draftsman for Finkle & Durant, 112 Park View, Detroit, Mich.
JOUINE, G. P. F., 1907, IV, French Army.
KAHN, M. S., 1900, II, Physician and Surgeon, Hallettsville.
KELL, E., 1894, III, Mechanical Engineer, 2221 Columbus St., New Orleans, La.

KELLER, J., 1913, V, with Western Elec. Co., 3926 Bowser Ave., Dallas.
KELLY, C. P., 1913, I.
KELLY, H. J., 1911, IV, U. S. Engineers, Port Arthur.
KENDRICK, R. T., 1906, I, Ranchman, Hart.
KENEDY, O., 1883, III, Attorney at Law, Mexia.
KENNEDY, B. R., 1913, I, Dairy Manager, Falfurrias.
KENNEDY, E. J., 1912, I.
KERR, E. W., 1896, III, M. E., 1899, Professor of Mechanical Engineering, Louisiana State University, Baton Rouge, La.
KERR, J. G., 1898, I, Veterinarian, 135 Cypress St., Beaumont.
KIDD, J. W., E. E., 1909, Professor State School of Mines, El Paso.
KILLOUGH, D. T., 1914, I, Galveston.
KINCAID, E. B., 1911, I, San Antonio.
KINCHELOE, J. M., 1915, II, Student University of Virginia, Charlottsville, Va. Home Address, Hubbard.
KINNARD, A. W., 1915, I, Creamery Manager, Bryan.
KINSLOE, R. H., 1903, Magnolia Pet. Co., Beaumont.
KIRKPATRICK, L. R., 1906, III, Farmer, McKinney.
KIRSCHNER, I., 1901, IV, Resident Engineer W. F. & N. W. Ry., Leedy, Okla.
KLEINSMITH, M. L., 1901, IV, Resident Engineer, Maricopa, Cal.
KLEUSER, M. C., 1910, VII, Draftsman, with Hubbell & Green, Dallas.
KLOSS, E. L., 1902, III, Machinist I. & G. N. Shops, San Antonio.
KLOSS, O. H., 1907, IV, Asst. Cashier First National Bank, Bellville.
KNOLLE, A. P., 1888, IV, Physician, Ellinger.
KNOLLE, B. E., 1894, III, Physician, Industry.
KNOLLE, E. R., 1887, III, Physician, Brenham.
KNOLLE, O. J., 1897, I, Physician, Industry.
KNOLLE, W. H., 1888, IV, Physician and Surgeon, 3941 Canal St., New Orleans, La.
KNOX, G. P., 1914, IX, Southern Structural Steel Co., San Antonio.
KOINM, C. H., 1913, Engineer for Doherty Operating Co., 60 Wall St., N. Y.
KOONS, J. V., 1911, III, Civil Engineer, El Campo.
KOPKE, L. J., 1880, IV, Civil Engineer and Real Estate, Beaumont.
KOTZBUE, M. H., 1914, III, Chief Engineer Tulsa Boiler and Machinery Co., Tulsa, Okla.
KOWALSKI, B., 1906, IV, with Fred A. Jones Bldg. Co., Dallas.
KRAUSKOPH, E. M., 1911, IV, U. S. Engineer, Miss. River Com., Vicksburg, Miss.
KREUGER, C. C., 1912, IV, Salesman, S. A. M. and S. Co., San Antonio.
KRAEGE, A. C. A., 1913, V, with Gen. Elec. Co., Schenectady, N. Y.
KROULIK, HUGO J., 1905.
KUEHNE, J. F., 1889, II, Manufacturing and Commission Agent, Box 5104, Mexico City.
KYLE, A. J., 1897, I, Stockman, Pecos.
KYLE, E. J., 1899, II, Professor of Horticulture and Dean of School of Agriculture, College Station.
*KYLE, H. C., 1896, I.
KYLE, J. A., 1890, I, Physician and Surgeon, Member of Board of Directors A. & M. College, 402 Carter Bldg., Houston.
*KYLE, T. M., 1893, III.
LAAKE, E. W., 1913, I, U. S. Dept. Agriculture, Box 208, Dallas.
LAMMERS, E. S., Jr., 1913, V.
LANDA, L. M., 1907, V.
LANE, G. I., 1914, I, Valley Mills.
LANE, G. J., 1913, I, Farmer, Valley Mills.
LANGDON, Y. M., 1913, IX, Planter, Hutchins.
*LANGDON, W. F., 1911, IV.
LANGFORD, E., 1913, VII, Instructor in Drawing, College Station.
LANGSTON, J. A., 1912, I.
*LAUDERDALE, J. R., 1908, I.
LAUDERDALE, J. C., 1911, IV, Somerville.
LAW, F. M., 1895, I, Vice-President First National Bank, Houston.
*LAWLEY, L. P., 1902, I.
LEAR, J. E., E. E., 1909, Professor of Electrical Engineering, Northfield, Vt.
LEARY, EDGAR M., 1905, IV, Civil Engineer, with Mex. & N. W. R. R. Home Address, Alvin.
LEE, D., 1911, IV, Student Cornell University, Ithaca, N. Y.
LEE, H. F., 1909, V.
LEE, KNOX, 1908, V, B. E. L. & P. Co., Beaumont.
LEGGETT, C. W., 1910, III, Chemist Terrell Cotton Oil Co., Terrell.
LEGGETT, W. W., 1889, IV, Co. "C," 1st Bat. U. S. Engineers, Manila, P. I.
LEHMANN, E. W., 1913, Iowa State College, Ames, Iowa.
LEMPERT, L. H., 1907, V, General Electric Co., Lynn, Mass.
LENERT, A. A., 1914, I, Student K. C. Vet. College, Kansas City, Mo.
LENERT, L. G., 1906, IV.
LENZ, L., 1907, IV, Draftsman R. of W. Department S. P. R. R., Box 464, Houston.
LEROY, L. F., 1911, III.
LEVY, D. H., 1914, V, Waco.
LEWIS, F., 1894, IV, Farmer, Forney.
LEWIS, J., 1900, I, Veterinary Surgeon, Greenwood, Miss.
LEWIS, L. L., 1893, I, M. S., 1894, Professor of Zoology and Veterinary Science, Oklahoma A. & M. College, Stillwater, Okla.
LEWIS, M. G., 1899, III.
LICHTE, F., 1906, VI, Merchant, Cleburne.
LIDIAK, J. P., 1913, III, Westinghouse Machine Co., 813 Holland Ave., Wilkinsburg, Pa.
LIENHARD, L. V., 1913, IV, Santa Fe R. R., Wellington, Kan.
LILLARD, S. A., 1910, IV, Manager Flour Mill, Decatur.

LILLARD, W. W., 1904, IV, Contractor, Altus, Okla.
LILLY, R. C., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
LINDEMAN, C. E., 1903, III.
LINDEMAN, JAMES E., 1905, III.
LINDLEY, T. L., 1912, I, Wortham.
LINDNER, M., 1908, III, with Ed. Friedrich, 513 Dakota St., San Antonio.
LIPSCOMB, R. S., 1882, III, Physician, Grapevine.
LITTLEJOHN, R. G., 1891, IV, City Assessor and Collector, City Hall, Fort Worth.
LOCHRIDGE, C. F., 1913, I, Farmer, Saginaw.
LOCHRIDGE, J. L., 1910, IV, Iowa Park.
LOCKETT, N., 1903, IV.
LOCKETT, W. R., 1913, I, Cleburne.
LODAL, M. G., 1913, I, Manager Cunningham Dairy Farm, Gordon.
LOMANITZ, S., 1908.
LOONEY, L. P., 1910, I, Farmer, R. F. D. No. 1, Commerce.
LORENZ, J. H., 1913, III, Asst. Cashier First State Bank, Stockdale.
LOUWIEN, H., 1911, V, Secretary Citizens' Gas, Elec. and Htg. Co., Mt. Vernon, Ill.
LOVE, A. C., 1899, IV, Prof. Railway Engineering, A. & M. College, College Station.
LOVING, J. W., 1906, I, Ranchman, Jermyn.
LOWN, F. D., 1913, I, Cotulla.
LUCKETT, W. H., 1891, I, Physician and Surgeon, 18 W. Thirty-seventh St., New York, N. Y.
*LUCKETT, W. M., 1894, III.
*LUHRSEN, C. W., 1900, IV.
LYLES, J. V., 1913, IV, Blue Grove.
McADAMS, E. E., 1911, IV, Instructor in Physics, College Station.
McANELLY, E. E., 1911, VII, Architect and Engineer, 1407-08 S. W. Life Bldg., Dallas.
McCALL, H. S., 1903, IV, Contractor, 309 Amicable Bldg., Waco.
McCARTY, S. C., 1915, IV, Draftsman, City of Taylor.
McCOLLUM, H. T., 1915, I, Teacher, Crystal City.
McCONNELL, J. P., 1911, IV.
McCONNICO, S. F., 1901, I.
McCORMICK, GEO., Jr., 1891, III, Asst. Superintendent G., H. & S. A. Ry., El Paso.
McCOWN, J. W., 1910, I, Farmer, Whitney.
McCULLOUGH, C. C., 1886, C. E., 1890, Lt. Col. U. S. Army, War Dept., Washington, D. C.
McCULLOUGH, R. E., 1912, IV.
McDANIEL, A. A., 1909, I, Surgeon, U. S. Army, 1st Lieutenant, Kingsville.
McDONALD, J. M., 1913, V.
McDONALD, W. A., 1910, V, Houston Light and Power Co., Houston.
McDONALD, H. F., 1895, III, Draftsman, General Land Office, Austin.
McDONALD, W. H., 1902, I, County Treasurer, Athens.
McDOWELL, C. H., 1912, I, Farmer, Corpus Christi.
McDOWELL, J. C., 1914, I, Farm Overseer, Volga.
McEACHERN, C. A., 1912, I, Merchant, Route 1, Austin.
McELROY, T. E., 1908, I, Horticulturist and Entomologist L. & N. R. R., Columbia, Tenn.
McFARLAND, ARTHUR, 1905, III, U. S. Engineering Dept., 2121 Fifth St., Port Arthur.
McFARLAND, J. L., 1912, V, with General Electric Co., Schenectady, N. Y.
McGINNIS, F. K., 1900, II, Horticulturist, Dallas.
McGINNIS, N. M., 1908, I, Associate Prof. of Horticulture, College Station.
McGINNIS, P. T., 1914, I, Land Inspector, 1103 Main St., Dallas.
McGRAW, M., 1911, III, Salesman, 2805 Routh St., Dallas.
McGREGOR, F., 1903, IV, Cattle Business, Lobo.
McILHENNY, J. L., 1910, IV, City Salesman Maverick-Clarke Co., 227 Woodlawn Ave., San Antonio.
McKAY, C., 1910, V, Manager Graphite Lubricator Co., 326 Diamond St., Pittsburg, Pa.
McKAY, G., 1910, V, W. E. & Mfg. Co., 2005 Euclid Ave., Cleveland, Ohio.
McKAY, G., 1903, III, Longview Iron Works, Longview.
McKNIGHT, O. J., 1903, IV, Cashier Dalhart Bank, Dalhart.
McLAVY, R. B., 1903, III, Bastrop.
McLENNAN, LAMAR, 1905, I, Loans, Hugo, Okla.
McLEOD, J. H., 1908, I, Arkansas Experiment Station, Fayetteville, Ark.
McMAHAN, L., 1911, V, Merchant, Waco.
McMILLAN, F. N., 1912, I, Calvert.
McMILLAN, L. B., 1911, III, 1912, M. E., 1913, Ch. E., Instructor in M. E., Madison, Wis.
McMILLAN, M. R., 1895, III, 1913, B. S., Physician and Surgeon, Health Dept., New York.
McMILLAN, S. A., 1909, I, Asst. Professor in Agronomy A. & M. College, College Station.
MacNAIR, H. J., 1887, III, Publisher, 16 E. Thirty-third St., New York.
McNEIL, J. C., 1896, IV., Ranchman, Spur.
McQUEEN, T. B., 1884, III, Accountant, Marlin.
MABRY, R., 1889, IV.
MACKENSEN, B. C., 1884, III.
MACKENSEN, L., 1885, III, Farmer, Houston.
MAEDGEN, C. E., 1904, I, Banker, Temple.
MANGUM, R. L., 1912, V, Draftsman Gulf Refining Co., Port Arthur.
MANSFIELD, B. J., 1912, VII, Architect and Business Manager, J. B. Clarkson Farms, Robstown.
MANSFIELD, H. R., 1903, IV, Eng. Dept. N. Y. C. & H. R. R., Room 3016, G. C. Station, New York City.
MARBACH, A., 1907, IV.
MARBURGER, BERNARD, 1905, IV, Roadmaster H. & T. C., Ennis.

MAREK, E. L., 1907, IV.
MARKHAM, E. L., 1902, IV, Asst. Engineer St. L. S. W. Ry., Pine Bluff, Ark.
MARKS, S. H., 1911, VI.
MARTIN, E. L., 1899, IV.
MARTIN, H. B., 1895, III.
MARTIN, C. A., 1911, I, Stock Farmer, Menard.
MARTIN, S. H., 1911, I, Rancher, Mason.
MARTIN, S. P., 1912, V, Bryan.
*MARTIN, W. C., 1898, II, M. S., 1901.
MARTIN, W. P., 1915, I, Farming, Rotan.
MASON, S. K., 1915, IV, Engineering Dept. Santa Fe, Beaumont. Home Address, Sta. A, San Antonio.
MASSENBERG, W. G., 1894, IV, Engineer Gulf Lines G., C. & S. F. R. R., Galveston.
MATTHEWS, H. F., 1903, IV, Contractor, San Antonio.
MAXWELL, J. W., 1904, III, Manager Copper Mines, Panulcillo, Cocuimbo, Chile.
MAXWELL, N. C., 1907, IV, Traveling Salesman. Home Address, Hico.
MAYER, M. F., 1906, VII, Architect, San Antonio.
MAYERS, H. P., 1914, IV, San Antonio.
MAYO, H. M., Jr., 1915, I, Houston.
MEAD, J., 1897, IV, Resident Engineer, St. L., B. & M. Ry., Bay City.
MEECE, B. L., 1912, V, American Smelting and Refining Co., Cia. Met. Noe., Matehuala, Mexico.
MEEK, R. W., 1904, III, Signal Supervisor T. & N. O. R. R., 1713 LaBranch St., Houston.
MELTON, W. B., 1914, I, Fletcher, N. C.
MENKE, C. H., 1910, Stockman, Hempstead.
MERIWETHER, W. T., 1891, IV, Tampico, Mexico.
*MERRETT, W. B., 1889, I.
METCALFE, J. D., 1906, IV, Rogers.
METCALFE, T. P., 1911, I, Scientific Asst. U. S. Dept. of Agriculture, Amarillo.
*MIDDLEBROOK, E. S., 1889, IV.
MIDDLEBROOK, R. M., 1891, III, Sales Manager, Gibbs Bldg., San Antonio.
MIKESKA H. J., 1910, IV.
MILEY, J. H., 1896, IV, Special Asst. to Attorney General of U. S., Wewoka, Okla.
MILLER, A. C., 1914, I, Medical Student, 1004 Market St., Galveston.
MILLER, C. S., 1880, President Ballinger State Bank and Trust Co., Ballinger.
MILLER, E. A., 1908, I, Horticulturist L. & N. R. R., Box 667, Etowan, Tenn.
MILLER, H. J., 1883, Banker, Member 34th Legislature, Bellville.
MILLER, J. D., 1912, IV.
MILLER M. J., 1911, IV, Fire Insurance Inspector, 111 W. Seventh St., Fort Worth.
MILLER, R. F., 1909, I, Asst. Prof. Animal Hus., Univ. of Cal., Davis, Cal.
MILLER, R. H., 1913, V, with General Elec. Co., Schenectady, N. Y.
MILLER, R. S., 1913, I, San Saba.
MILLER, V. W., 1914, V, Springtown.
MILLER, W. Z., 1913, I, County Agt. U. S. Dept. Agr., Edinburg.
MILLICAN, WAYNE, 1907, I, Streetman.
MINEAR, SYLVESTER, A., 1905, I, County Farm Demonstrator, Abilene.
MINTER, C. J., 1909, I, Bank Clerk, care First National Bank, Fort Worth.
MISTROT, G. A., Jr., IV, Mistrot-Curtis Co., 1504 Clay Ave., Houston.
MITCHELL, A., 1894, IV, Professor of Drawing, College Station.
MITCHELL, W. H., 1894, IV, Druggist, Holland.
MITCHELL, A. F., 1909, IV, Highway Engineer, Smithville.
MITTMAN, E. F., 1902, IV, Draftsman Ft. W. & D. C. R. R., Fort Worth.
MOH, H. Y., M. S., in Agr., 1914, Manager of Teh Dah Cotton Spinning Co., 78 Ward Road, Shanghai, China.
MONROE, J. S., 1900, IV, Asst. Engineer Mexican Central Ry., Mexico City.
MONTAGUE, F. O., 1915, I, Experiment Station, College Station. Home Address, Rockdale.
MONTEMAYOR, R. R., 1911, I. C., Jaumune, Tampico, Mexico.
MONTGOMERY, F. L., 1889, I, Lawyer, Muscogee, Okla.
MONTGOMERY, F. L., 1913, IV.
MOORE, C. B., 1911, I, Stock Farmer, Van Alstyne.
MOORE, F., 1902, I, Teacher, 410 W. Second St., Fort Worth.
MOORE, G. F., 1908, IV, 1st Lieutenant U. S. Army, Fort Worden, Wash.
*MOORE, G. G., 1903, IV.
MOORE, J. H., 1915, I, DeKalb.
MOORE, J. M., 1913, M. S., Food, Drug and Feed Clerk Dept. of Agr., Fayette, Ala.
MOORE, R., 1892, I.
MOORE, T. E., 1892, I, 110 E. Craig Place, San Antonio.
MOORE, W. G., 1907, V, Manager Texas Power and Light Co., Paris.
MOORE, W. M., 1895, IV, Real Estate, Dallas.
MOORE, W. S., 1911, I, Rancher, West Point.
MORLEY, M. D., 1912, III.
MORRILL, C. R., 1891, IV, Superintendent H. & T. C. R. R., Austin.
MORRIS, C. C., 1911, I, Demonstration Farm Agent, Pittsburg.
MORTON, O. L., 1911, III, Draftsman, care C. D. Elder, St. Vrain, N. M.
MOSELEY, HAL, 1901, IV, City Engineer, Dallas.
*MOSELEY, W. E., 1883, III.
MOSER, C. OTTO, 1904, I, President North Texas Creamery Co., Dallas.
MOSER, E. F., 1912, I, Wholesale Butter, 823 Wilson Bldg. Dallas.
MOSS, M. A., 1915, IV, Izora.
MOURSUND, A. F., 1895, IV.
MOURSUND, E. M., 1897, IV, Resident Engineer H. & T. C. R. R., Ennis.
MOUSER, E. B., 1895, I, Physician, Electra.

MOWERY, I. H., 1915, I, City Milk and Dairy Inspector, care Dr. Hamner, Dallas. Home Address, Almeda.
MULLINS, E. Y., 1879, President Southern Baptist Theological Seminary, Louisville, Ky.
MUNSON, T. A., 1910, IV, Civil Engineer, Angleton.
MUNSON, A., 1908, V, Civil Engineer, Angleton.
MUNSON, H. W., 1909, V, Stockman, Angleton.
MYERS, A. L., 1907, V, Mfg. Agt., 111 New Montgomery St., San Francisco, Cal.
MYERS, O. W., 1900, III, 406 Austin St., Palestine.
MYERS, W. G., 1894, III, Mining, Parral, Mexico.
NAGLE, J. M., 1911, IV.
NASH, J. F., 1915, V, Load Dispatcher Texas Power & Light Co., Hillsboro, Box 341.
NAVE, G. F., 1912, III, Bookkeeper, Kenedy.
NEALE, R. B., 1908, I, Stock Farmer, Archer City.
NEATHERY, D. E., 1892, I, Merchant, Farmersville.
NEFF, A. J., 1903, III, 1913, M. E., Consulting Engineer, 3111 Cole Ave., Dallas.
NEIGHBORS, A. H., 1911, VII, Physician, Seguin.
NESS, H., 1889, II, Horticulturist Experiment Station, College Station.
NETHERWOOD, D. B., 1908, III, 1st Lieut., Aviation Section, Signal Corps, U. S. Army, San Diego, Cal.
NETHERWOOD, J. S., 1911, III, Draftsman Sunset-Central, Houston.
NEWELL, G., 1910, V.
NEWTON, G., 1898, I, Merchant, Thorndale.
NEWTON, J. W., 1912, VIII, Chemist Mag. Pet. Co., Beaumont.
NICHOLS, J. F., 1898, II, Attorney at Law, Greenville.
NICHOLS, J. R., 1889, I, Oculist, State Institutions, Austin.
NICHOLS, W. L., 1891, IV, Real Estate, Wilson Bldg., Dallas.
NOLTE, R. W., 1913, V.
NORTH, W. G., 1908, I, Farmer, Yoakum.
NUGENT, C. W., 1913, VI, Accountant Am. Tel. and Tel. Co., 15 Dey St., N. Y.
NUSSBAUM, J. H., 1913, III, Erec. Eng. Allis-Chalmers Mfg. Co., 453 Sixty-fourth Ave., West Allis, Wis.
O'BAR, J. H., 1893, I.
O'CONNOR, D., 1913, I, Laredo.
O'CONOR, T., 1910, V, Laredo.
OGLESBY, G. B., 1894, IV, Farming, Gordonville.
OHLENDORF, W., 1913, I, Lockhart.
OLDS, T. H., 1902, IV, Sao Paulo Light and Power Co., Sao Paulo, Brazil.
OLIPHANT, J. W., 1903, IV, Civil Engineer, with S. Gibbs, Huntsville.
OLIPHANT, L. N., 1913, IV, Rice.
OLIVER, C., 1913, I, Lampasas.
OLSON, J. N., 1913, IV, 1609 Ave. L, Draftsman G., C. & S. F., Galveston.
ORTH, W. A., 1913, VII, Bank Clerk, Yoakum.
ORR, W. R., 1906, IV, Grocer, Llano.
ORTIZ, J. A., 1892, IV, Stockman, 915 Zaragossi St., Laredo.
OVERSHINER, E. M., 1897, IV, County Judge, Abilene.
PALMER, G. C., 1915, I, Teacher, Route 1, Rotan.
PAPE, G. H., 1904, IV, Cotton Exporter, Waco.
*PARK, C. M., 1896, IV.
PARKER, EARL, 1914, V, Carthage.
PARKS, L. D., 1911, IV.
PARR, V. V., 1914, I, Stock Farmer, Groveton.
PARSONS, B. C., 1893, II.
PATRICK, A. T., 1883, III.
PARTRIDGE, R. C., 1912, III, Farming, Munday.
PATTERSON, J. C., 1912, I, Dairy Specialist, State Dept. Agr., Austin.
PEARCE, R. B., 1911, IV, Richland.
PEARSON, H. A., 1893, IV, Farmer, Troy.
PEDEN, L. T., 1904, IV, Dewson & Fletcher, Houston.
PENDLETON, DAVID E., 1905, IV.
PENNER, W. A., 1906, V.
PENNINGTON, R. E., 1884, I, Lawyer, Brenham.
*PERLITZ, W. E., 1893, IV.
PERSONS, D. H., 1915, I, Farmer, Hico.
PESCAY, C. H., 1885, III, Adjuster of Fire Losses, 817 Hennen Bldg., New Orleans, La.
PETER, L. S., 1911, V, Automobile Designing Engineer Milburn Wagon Co., 1105 Oakwood, Toledo, Ohio.
PETERS, E. M., 1915, I, Hondo.
PETERSON, J. A., 1914, III, Engineer Galveston Gas Co., 423 Thirty-second St., Galveston.
PETERS, R. F., 1894, III, Chief Draftsman S. A. & A. P. Ry., San Antonio.
PFEUFFER, F. L., 1885, III, Real Estate Colonizing, Omaja, Cuba.
*PFEUFFER, W. O. R., 1888, I.
PFEUFFER, U. S., 1891, IV, Lumber Merchant, New Braunfels.
PHILLIPS, F. R., 1914, II.
PHILPOTT, W. B., 1884, III, M. S., 1890, care D. M. Derden, Amarillo.
PICKENS, D. B., 1914, V, Western Elec. Co., Dallas.
PICKETT, G., 1911, III, Medina Irrigation Co. Home Address, Karnes City.
PIRIE, J. E., 1904.
PIRIE, J. H., 1906, V, 1st Lieut. Coast Artillery U. S. Army, Fort Strong, Mass.
PITTUCK, B. C., 1894, I, Assistant Manager Ferguson Seed Farm, Sherman.
POLANSKY, T., 1909, IV, Assistant Engineer Texas City Ter. and Trans. Co., Texas City.
POLK, W. A., Jr., 1895, IV, Wholesale Grocer, Dallas.
POOL, H. M., 1911, IV, U. S. Army, Camp E. S. Otis, C. Z.

POTTHAST, A. H., 1911, IV, Physician, Weimar.
POTTS, A. T., 1907, I, Assistant Professor of Horticulture, College Station.
POTTS, R. J., 1906, IV, C. E., 1907, Potts-Moore Gravel Co., Waco.
*POULTER, R. J., 1899, II.
POWELL, L. H., 1914, IV, Athletic Director W. T. M. A., Box 1096, San Antonio.
PRICE, W. A., 1905, I, Farmer, Reagan.
PROCTER, J. H., 1910, V, 1913, E. E., Westinghouse Elec. Co., Pittsburg, Pa.
PUCKETT, D. M., 1911, IV, with U. S. Engineers, Dallas.
PUCKETT, F. S., 1907, I, care N. C. Dept. of Agriculture, Raleigh, N. C.
PUCKETT, J. W., 1904, IV, Civil Engineer, Los Andes, Chile, S. A.
RACK, E. C., 1915, V, Transformer Tester West. Elec. & Mfg. Co., 705 Lamar Ave., Wilkinsburg, Pa. Home Address, Waco.
RADFORD, J. S., 1890, II, Manager Oriental Textile Mills, Houston.
RAGSDALE, J. W., 1890, I, Lawyer, Hallettsville.
RAMSAY, J. W., 1906, V, Instructor in Electrical Engineering, University of Texas, Austin.
RATCHFORD, W. P., 1892, III, Dep. U. S. Marshal, Box 1056, Austin.
RATHER, J. B., 1907, I, M. S., 1911, Arkansas Experiment Station, Fayetteville, Ark.
RAWLINS, H. E., 1898, III.
RAY, S. H., 1911, I.
READING, R. S., 1910, V, Otis Elevator Co., Houston.
REED, W. N., 1914, I, Rancher, Sterling City.
REESE, G. W., 1907, IV, Bosque-Wensley Lead Co., 215 E. Eleventh Ave., Denver. Colo.
*REICHARDT, F. A., 1879.
RENNERT, F., 1888, I, Commission Merchant, Rennert-Millette Co., San Antonio.
REYNOLDS, W. L., 1915, III, Asst. Manager Livingston Lumber Co., Buck, Polk Co., Texas.
*RHODES, S. E., 1896, III.
RHOME, R. J., 1901, Attorney at Law, Fort Worth.
RICE, D., 1882, III, Public Weigher, 1107 Lamar St., Houston.
RICE, E. R., 1902, III, Gen. Manager of Efficiency Eng. Co., Bisbee, Ariz.
RICH, L. G., 1914, I, Odd Fellows Home, Corsicana.
RIDENHOWER, R., 1903, IV, Hico.
RIDENOUR, C. A., 1909, IV, U. S. Junior Engineer, Dallas.
RIFE, A. J., 1909, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
RIKE, H. M., 1893, IV, Abstractor, Haskell.
RILEY, A. A., 1909, IV, Assistant Engineer T. & N. O. R. R. Co., Y. M. C. A. Bldg., Houston.
RISIEN, G. W., 1903, IV, Draftsman N. Y. C. & H. R. Ry., 5 W. 129th St., New York City.
*ROACH, G. W., 1884, III.
*ROBBINS, A. J., 1911, III.
ROBERTS, C. A., 1913, I, Rice Farmer, Beaumont.
ROBERTS, F. A., 1913, IV, Austin.
*ROBERTSON. D. K., 1902, III.
ROBERTSON, R. L., 1909, I, Ranchman, Waelder.
ROBINSON, E. R., 1908, I, Ranchman, Dalhart.
ROBINSON, G. W., 1911, V, Private Garage, 2525 Mechanic St., Galveston.
ROBSON, C. G., 1898, II, President Southern Tel. Co., La Grange.
RODRIGUEZ, D., 1896, IV.
ROGAN, CHAS., 1879, Lawyer, Austin.
ROGERS, B. F., 1889, IV, Banker, Jefferson.
ROGERS, C. P., 1900, II, Attorney at Law, Austin.
*ROGERS, G. A., 1887, III.
ROGERS, R. A., 1878, Cotton Factor and Commission Merchant, Galveston.
ROLLINS, A. P., 1906, IV, Medina Valley Irrig. Co., Natalia.
ROLLINS, C. W., 1894, IV, Civil Engineer Neches Canal Co., China.
ROLLINS, H. M., 1897, III, Foreman Gulfport Creosoting Works, Gulfport, Miss.
ROLLINS, J. G., 1913, IV, Asst. Highway Engineer, Box 211, Rogers.
ROLLINS, M. E., 1914, III, Merit.
ROMBERG, C. B., 1912, III, Chief Engineer Ice, Light and Power Co., Henryetta, Okla.
ROSA, R. R., 1912, I.
ROSE, W. F., 1894, III, Wholesale Plumbing and Heating Supplies, 429-31 Main Ave., San Antonio.
ROSEBOROUGH, W. D., 1909, IV.
VON ROSENBERG, H. C., 1913, V, Hallettsville.
VON ROSENBERG, H. J., 1912, VII, Construction Engineer, Hallettsville.
ROSENTHAL, H. H., 1896, IV, U. S. Treasury Dept., Austin.
ROSS, F. R., 1894, I, Physician and Surgeon, Houston.
ROSS, J. G., 1894, IV, Attorney at Law, Cold Springs.
ROSS, J. L., 1902, IV.
ROSS, R., 1902, IV.
ROUNTREE, T. D., 1898, IV, Physician, Lake Creek.
ROWELL, T. D., 1885, I, Attorney at Law, Jefferson.
RUBENKOENIG, H., 1904, III, Instr. Car and Locomotive Design Purdue University, Lafayette, Ind.
RUDASILL, W. S., 1890, IV, Real Estate Dealer, Box 94, Sherman.
RUDLOFF, E. W., 1911, V, Otis Elevator Co., Houston.
RUDOLPH, R. F., 1911, U. S. Junior Engineer Govt. Fleet, Benoit, Miss. Permanent Address, Box 404, Vicksburg, Miss.
RUNGE, J. F., 1914, I, Stock Farmer, Miles.
RUST, W. M., Jr., III, Signal Department, Seguin.
RUTAN, W. L., 1915, IX, Engineer Texas Co., Box 303, Port Arthur.
SAMMONS, THOMAS B., 1905, Hardware and Saddlery, Mission.

SAMPSON, W. E., 1908, IV, Vice-President and Gen. Man. Texas Rock Co., Beaumont.
SAMUCH, L., 1902, IV, Merchant, Hallettsville.
SANDERS, J. L., 1915, I, Farmer and Rancher, Lavernia.
SANDERS, M. D., 1915, I, Hubbard.
SANDERS, P. L., 1903, IV, Controller Galvez Hotel, Galveston.
SANDERS, W. O., 1896, II, Manager Parker Lumber Co., Bryan.
SANFORD, C. E., 1911, IV, with Roach Manigan Paving Co., 811 State Bank Bldg., San Antonio.
SANSOM, G. W., 1915, VI, Teacher, Goliad.
SAPER, G. A., 1915, VIII, American Steel Foundries, Pittsburg, Pa. Home Address, 1517 Prairie Ave., Houston.
SAUVIGNET, E. H., 1892, I, Physician, Laredo.
SAVAGE, C. H., 1915, I, Stock Farmer, R. R. No. 5, Fort Worth. Home Address, Bailey.
SAWYER, R., 1882, III, Breeder of High Grade Hereford Cattle, Clarendon.
SAYERS, A. F., 1913, IV, Civil Engineer, 708-9 Stewart Bldg., Houston.
SCARBOROUGH, JOHN, 1912, IV, Mining Eng. Unsan, Chosen, Japan.
SCHADT, C. A., 1907, V, Merchant, Twenty-seventh St. and Ave. H, Galveston.
SCHAEFFER, R. E., 1908, III, Hardware Business, Schulenburg.
SCHAEDEL, C. T., 1912, IV, Bay City.
SCHAEFER, S. E., 1914, III, Shipping Clerk, 1924 Mitchell St., Waco.
SCHAWE, W. A., 1907, I, Hardware Merchant, Bowie.
SCHERER, C. L., 1896, IV, City Engineer, Beaumont.
SCHERER, W. A., 1898, II, Stockman, Anahuac.
SCHILLER, R. E., 1906, IV, C. E., 1908, Eng. Dept. M., K. & T., Waco.
SCHLEY, C. C., 1910, V, Rancher, Marathon.
SCHLOM, C. L., 1912, IV, Gulf Pipe Line Co., Houston.
SCHMIDT, C. L., 1890, III, Pierce-Fordyce Oil Association, Laredo.
*SCHMIDT, D. T. C., 1894, IV.
SCHMIDT, F. H., 1914, IV, Computor A., T. & S. F. Ry., Amarillo.
SCHMIDT, H., 1908, I, Veterinarian, Experiment Station, College Station.
SCHOLL, E., 1907, State Entomologist, Department of Agriculture, Austin.
SCHROEDER, E. A., 1911, VII.
SCHROEDER, ERWIN F., 1905, I, Veterinarian, 15 Arthur St., Somerville, Mass.
SCHROETER, H., 1907, IV.
SCHROETER, A., 1909, IV, Civil Engineer, 1821 Fillmore St., Topeka, Kan.
SCHROETER, R. R., 1913, IV, Engineer, Cypress Mill.
SCHUMACHER, H. C., 1892, IV, Wholesale Grocer, Houston.
SCHUWIRTH, W. C., 1914, V, Prop. Gulf Coast Elec. Co., Box 183 Corpus Christi.
SCHWAB, L. C., 1911, III, care Y. M. C. A., Milwaukee, Wis.
SCOFIELD, J. A., 1913, I, Stockman, Carey.
SCOTT, D. W., 1915, I, McKinney.
SCOTT, F. L., 1914, III, Teacher of Manual Training Central High School, 715 S. Jennings St., Fort Worth.
SENGELMANN, G. H. F., Jr., 1915, I, Clerk at G., H. & S. A. Ry. Office, Schulenburg.
SEWARD, O., 1907, IV, Asst. City Engineer, Beaumont.
SEWELL, M. S., 1894, IV, Merchant, McGregor.
SHANKLIN, R. W., 1906, IV.
SHEARER, D. M., 1909, IV, U. S. Engineer, Greenville, Miss.
SHEARER, T. R., 1912, I, Secretary New Era Gravel and Drainage Co., Houston.
SHERRARD, R. G., 1910, V, 2nd Lieutenant U. S. Army, Plattsburg Barracks, New York.
SHERRILL, O. W., 1910, I, Farmer, Kerens.
SHIELS, R. T., 1910, V, Sales Engineer General Elec. Co., Chicago.
*SHIRES, F. N., 1897, III.
SHIRES, G. M., 1897, III, City Boiler and Elevator Inspector, City Hall, Houston.
SHIRLEY, A. L., 1884, I, Farmer and Merchant, Anna.
*SHIRLEY, M. W., 1889, III.
SHIRLEY, W. M., 1889, IV, County Treasurer, Collin County, McKinney.
*SHIRLEY, Z. M., 1888, III.
SHORT, A. K., 1900, I, Superintendent Experiment Station, Temple.
SHORT, J. L., 1893, I, Physician and Surgeon, 617 Kress Bldg., Houston.
SHROPSHIRE, L. O., 1912, V, County Surveyor, Plainview.
*SIGEL, R. C., 1909, III.
SIMON, R. B., 1913, V, Equipment Engineer, 5038 W. Twenty-third St., Cicero Ill.
SIMPSON, J. H., 1901, IV, Deck Officer U. S. Bache Fijardo, Porto Rico.
SIMPSON, J. N., 1914, I, Trav. Cattle and Hog Buyer Union Meat Co., San Antonio.
SIMPSON, O. M., 1900, IV, Hardware, Callehan & Simpson, Jacksboro.
SIMPSON, S. H., 1909, IV, Cashier Simpson Bank, Columbus.
SINGLETARY, J. N., 1910, I, Instructor in Science, Longview High School, Longview.
SKAGGS, G. E., 1908, V, Assistant Engineer Bell Tel. Co., St. Louis, Mo.
SKEELER, F. J., 1910, V, Instructor in Physics, College Station.
SKEELER, L. J., 1915, VIII, Chemist for Sloss, Sheffield Steel and Iron Co., Flat Top, Ala. Home Address, Orange.
SLAY, S. H., 1914, III, Frost.
SLEEPER, W. M., 1879, III, Lawyer, 714 N. Twelfth St., Waco.
*SLOSS, A. M., 1899, I.
SMITH, A. J., 1908, I, Farmer, Port Sullivan.
SMITH, A. U., 1895, III, Retail Sales Manager for Briggs Weaver Mach. Co., 307 N. Market St., Dallas.
SMITH, E. J., 1888, I, Attorney at Law, Denison.
SMITH, E. W., 1910, IV, Consulting Engineer, Apartado 205, Tampico, Tamps, Mexico.
SMITH, G. A., 1909, V, Bermuda.
SMITH, M. W., 1915, V, Overton.
SMITH, T. L., Jr., 1898, IV, State Agent, The Muncie Oil Engine Co., 15 Main St., Houston.

SMITH, T. M., 1901, I, Bookkeeper, Columbia.
SMITHAM, V., 1915, III, M. of W. Dept. M., K. & T., Denison.
SMITHER, R., 1894, III.
*SMYTHE, H. G., 1879.
SNEARLEY, C. L., 1911, V, Electrician Automatic Elec. Co., Chicago, Ill.
SNEED, G. L., 1898, I, Minister, 108 Cumberland St., Dallas.
SNIDER, J. B., 1914, I, Instructor in Agriculture Marshall High School, 410 S. Grove St., Marshall.
SOLES, C. B., 1899, III, Machinist I. & G. N. Shops, Palestine.
SORY, E. G., 1912, IV, Draftsman M., K. & T. Ry., Dallas.
SOUTHER, S. C., 1912, I, Farmer, Rosebud.
*SPANN, E. W., 1885, III.
SPARKMAN, F. A., 1914, I, Teacher, Eldorado.
SPEER, R. H., 1894, IV, Stockman, Quanah.
SPENCE, E. V., 1911, IV, County Engineer and Surveyor of Jim Wells Co., Alice.
SPENCE, T. R., 1913, IV, Student Cornell University, 302 Bryant Ave., Ithaca, N. Y. Home Address, College Station.
SPENCER, F. C., 1915, IV, Athens.
SPENCER, T. C., 1914, IV, Athens.
SPENCER, W. W., 1911, III, Clerk Commonwealth National Bank, Dallas.
SPIVEY, M. C., 1908, IV.
STALLCUP, J. F., 1904, IV.
STALLINGS, J. H., 1914, I, Agriculturist Franklin Co. High School, Meadville, Miss.
STANDIFER, R. H., 1908, IV, Engineer for Fort Worth Stock Yards and Fort Worth Belt Ry. Co., 1720 Horley Ave., Fort Worth.
STANGEL, W. L., 1915, I, Student Missouri Univ., 1305 Bass Ave., Columbia, Mo. Home Address, 211 W. Twenty-fifth St., Fort Worth.
STAPP, W. E., 1904, IV.
STELZIG, E. H., 1914, I, Teacher, Verda, La.
STERNBERG, E. H., 1897, IV.
STERNENBERG, PAUL, 1905, III, Superintendent Steel Works, 2228 Chapel St., Berkeley, Cal.
STERNS, J. B., 1903, Civil Engineer Nona Mills Co., Leesville, La.
STEVENS, D. T., 1913, I, Bryan.
STEVENS, R. R., 1910, IV, Engineer C., M. & S. P. Ry., Minneapolis, Minn. Home Address, Clarendon.
STEWARD, W. W., 1888, III, County Surveyor, Kirven.
STEWART, J. E., 1912, IV.
STIMSON, O. E., 1910, IV, Houston.
STINSON, L. V., 1904, IV, Civil Engineer and County Surveyor, Durant, Okla.
STONE, J. M., 1913, I, Stable Manager City of Houston, 1720 Mary St., Houston.
STREET, GUS C., Jr., 1905, I, Contractor, Houston.
STRIBBLING, S. R., 1915, V, Student M. I. T., 168 Huntington Ave., Boston, Mass. Home Address, Waco.
STRIEBER, C. A., 1902, III, Machinist I. & G. N. Shops, 215 Trinity St., Palestine.
STROUD, M. L., 1914, I, Kaufman.
STUBBS, VAN HOOK, 1905, I, Banker, Wortham.
SVASTA, S. F., 1910, V, Western Electric Co., Cicero, Ill.
SWAIN, M. S., 1888, II.
TABER, R. G., 1910, IV, Engineer S. & W. E. Co., Dallas.
TABOR, J. R., 1906, VII, Architect, Houston.
TALBOT, A., 1882, III, Planter, Calvert.
TANNER, E. L., 1914, I.
TARVER, T. C., Jr., 1904, IV, Consulting Engineer, 202-204 Beatty Bldg., Houston.
TAYLOR, A. B., 1913, I, Burnet.
TAYLOR, L. T., 1912, IV, Rodman G., C. & S. F. Ry. Co., Crawford.
TAYLOR, M., 1911, V, Engineer Western Union Tel. Co., Dallas.
TELFAIR, W. H., 1909, V, Chief Electrician, The Texas Co., 912 Fifth St., Port Arthur.
TEMPLETON, B. O., 1912, V, Western Elec. Co., 5035 W. Twenty-third St., Cicero, Ill.
TERRY, L. H., 1911, VIII, Farmer, R. F. D. 1, Mesquite.
THALMANN, C. H., 1911, III, Ranch Manager, Bandera.
THANHEISER, C. A., 1901, IV, Superintendent M., K. & T. Ry., Smithville.
THANHEISER, L. O., 1911, V, San Antonio Gas and Electric Co., San Antonio.
THARP, P., 1910, IV, Attorney at Law, Stewart Bldg., Houston.
THAXTON, HAROLD, 1912, I, Mason.
THOMAS, J. B., 1911, III.
TOMAS, M. F., 1901, III, Instructor ond Graduate Student Cornell University, Ithaca, N. Y.
THOMPSON, C. B., 1907, III, Milling Engineer, 917 S. Alameda St., Los Angeles, Cal.
THOMPSON, T. E., 1910. IV.
THOMSON, J. M., 1913, I, Florence.
THROWER, J. D., 1900, I, Producer of Anti Hog Cholera Serum, 608 W. Thirty-ninth St., Kansas City, Mo.
TIGNER, J. B., 1913, VI, Duke.
TIGNER, J. H., 1915, I, Houston.
TILSON, M. D., 1886, III, Manufacturer and Merchant, Texarkana.
TILSON, P. S., 1888, I, M. S., 1894, Director Houston Laboratories, 215 1-2 Main St., Houston.
TILSON, W. H., 1903, IV, City Engineer, Plainview.
TINKER, E. B., 1914, IV, Bank Clerk, Hillsboro.
TODD, A. M., 1894, IV, U. S. Assistant Engineer, P. O. Box 404, Vicksburg, Miss.
TODD, CHAS. C., 1897, II, Attorney at Law, San Antonio.
TODD, D. H. B., 1911, V, Claim Adjuster P. & S. F. Ry., Amarillo.

TOLBERT, W. S., 1913, I, Farmer and Cattle Raiser, Happy.
TORRENCE, W. C., 1913, III, Waco.
TRACY, H. H., IV, Hardware, Tulia.
THREADWAY, S. J., 1907, IV.
TRENCKMANN, R., 1907, III, Fairbanks, Morse & Co., Beloit, Wis.
TRENCKMANN, W. A., 1878, Newspaper Publisher, Austin.
TRICKEY, W. W., 1911, IV, Engineer Bemis Co., 714 N. Pearl St., Dallas.
TRIGG, K. M., 1911, I, Stock Farmer, Bastrop.
TUCKER, D. H., 1913, V, Junior Engineer, Merlin, Ont., Canada.
*TULLER, W. L., 1883, III.
TURNER, J. M., 1915, I, Teacher, Yancey. Home Address, Chenango.
UECKERT, H. H., 1897, IV, Draftsman M. of W. Department, Sunset Route, Houston.
UNDERWOOD, A., 1907, IV, Civil Engineer, Houston.
UNDERWOOD, HARRIS, 1912, IV, Stock Raising, La Porte.
VAN AMBURG, T. A., 1909, IV, Pilot Engineer, Valuation, care Chief Engineer St. L. S. W. R. R., St. Louis, Mo.
VAN ZANDT, K. M., Jr., 1879, Vice-President and Manager Mercantile Banking Co., Apartado No. 1212, City of Mexico.
VAN ZANDT, R. L., 1890, IV, Governor Federal Reserve Bank, Dallas.
VICK, JNO. C., 1904, III, Miller, Bryan.
VINTHER, F., 1897, III.
VOELCKER, H. R., 1909, VII, Heating and Ventilating Engineer 918 Fannin St., Houston.
VON ROSENBERG, F. C., 1884, III, Attorney at Law, Austin.
VOSSLER, J. M., 1914, V, Houston.
WALDEN, W. J., 1900, I, M. S., 1903, Attorney at Law, 703 Union National Bank Bldg., Houston.
WALKER, P. W., 1913, V, Ranchman, Littlefield.
WALKER, R. R., 1911, V, General Electric Co., Pittsfield, Pa.
WALKER, W. T., 1906, VI, Farming, San Saba.
WALLACE, L. W., 1903, III, Professor Railway and Industrial Management, Purdue University, West Lafayette, Ind.
WALLIS, J. W., 1909, V, 1st Lieutenant Coast Artillery, Fort Monroe, Va.
WALLIS, T. T., 1913, I, Farm Manager, Westerhoff.
WALZEM, L. F., 1913, III, New Braunfels.
WANGEMANN, A. E., 1890, I, Wholesale Grocer, Brenham.
WARD, A. L., 1910, I, Farmer, P. O. Box 423, Paris.
WARDEN, J. A., 1908, IV.
WARDEN, T. B., 1903, IV, Merchant, Redwater.
WARREN, C. B., 1914, I, Farm Manager, Pharr.
WARREN, C. F., 1915, I, Farmer, Hewitt.
WASHAM, O. F., 1915, I, with Easby Pecan Co., 1400 S. Ninth St., Waco.
WASHBURN, H. A., 1906, IV, Draftsman S. P. R. R., Houston.
WASHBURN, JOHN E., 1905, III, Assistant Master Mechanic National Carbon Co., Cleveland, Ohio.
WASHBURN, W. W., 1908, IV, Bridge Engineer City of Houston, Houston.
WASHINGTON, W. C., 1912, V, 2nd Lieutenant U. S. Army, Fort Crockett, Galveston.
WATERS, J. J., Jr., 1913, IV, Right of Way Appraiser S. L. & S. F. R. R., care Fifth Avenue Hotel, Agusta, Kan.
WATKINS, H. B., 1912, IV, Bowie.
WATKINS, R. C., 1895, IV, Superintendent G., H. & S. A.,, San Antonio.
WATKINS, W. A., 1892, IV.
*WATSON, D. H., 1882, III.
WATSON, J. L., 1915, I, Teacher, De Leon. Home Address, Stephenville.
WATSON, W. D., 1893, I.
WEAR, H. A., 1914, IX, Assistant Bank Cashier, Rogers.
WEATHERBY, E. P., 1903, III, Signal Engineer, T. & P. Ry., Dallas.
WEBB, THOMAS C., 1905, IV.
WEIDEL, J., 1893, IV.
WEINERT, H. G. H., 1913, I, Farmer, R. 1, Box 37, Seguin.
WEINERT, M. H., 1909, V, Principal High School, Seguin.
WELBOAN, J. S., 1906, I, Cashier Citizens State Bank, Alvin.
WELBORN, G. M., 1912, V, Palestine.
WELHAUSEN, C. B., 1891, III, Merchant, Shiner.
WELHAUSEN, P. H., 1905, III, Assistant Cashier First National Bank, Shiner.
WELLS, D. D., 1895, I.
WENDTLAND, W. A., 1912, III, Merchant, Shiner.
*WESSEN, J. M., 1883, III.
WESSENDORF. J. A., 1907, VI, Bookkeeper and Assistant Manager for J. A. Wessendorf, Richmond.
WEST, T. B., 1887, III, Agent G., H. & S. A. Ry., Columbus.
WHELAN, J. J., 1891, III, Machinist, H. & T. C. Ry., Houston.
WHEAT, G. N., 1897, IV, Rock Springs.
WHEELER, A. C., 1905, I, Ranchman, Sue.
WHISENANT, W. H., 1899, II, Pharmacist, 117 E. Houston St., San Antonio.
WHITAKER, W., 1885, III, Oil Producer, Texarkana.
WHITE, G. R., 1895, IV, Stockman, Brady.
WHITE, T. F., 1913, I, Teacher of Agriculture, Hamilton, Ala. Home Address, Lott.
WHITENER, H. L., 1891, I, Physician, 2009 E. Grand Ave., St. Louis, Mo.
WHITESIDE, B., 1913, IV, Lott.
WHITFIELD, C. A., 1913, I, San Angelo.
WHITLOCK, E. H., 1886, III, General Superintendent The Sandusky Portland Cement Co., 818 Engrs. Bldg., Cleveland, Ohio.

WHITTET, A. B., 1908, III, Ordnance Office, War Department, Room 190, State War and Navy Bldg., Washington, D. C.
WHITTET, C. S., 1915, VIII, Chemist S. S. Steel and Iron Co., Flat Top, Ala. Home Address, Anchorage.
WHITTET, H. E., 1909, V, Anchorage.
WHITTLE, C. T., 1899, III.
WICKES, H. G., 1912, I, Student Ohio University, 207 W. Avenue, Columbus, Ohio.
WIGHT, A. T., 1895, IV, General Merchandise, Roxton.
WIGNALL, C. L., 1909, VII, Architect, 13-15 Brinkmann Bldg., Port Arthur.
WILLIAMS, I. L., 1903, III.
WILLIAMS, L. D., 1897, IV, Bookkeeper Austin National Bank, Austin.
WILLIAMS, J. S., 1909, I, Farmer, Benton, Miss.
WILLIAMS, R. S., 1910, V, Eck Dynamo and Motor Co., Newark, N. J.
WILLIAMS, T. S., 1911, III, care Industrial School, Racine, Wis. Home Address, Cuero.
WILLIAMSON, H. H., 1911, I, Assistant in Extension Department, College Station.
WILLIFORD, C. L., 1911, III, Draftsman City Engineer's Office, Houston.
WILSON, ASHLEY F., 1905, IV.
WILSON, A. G., 1912, IV, Surveyor, McKinney.
WILSON, W., 1893, IV, Attorney at Law and County Judge, Calhoun County, Port Lavaca.
WINDROW, R. J., 1906, IV, 1913, C. E., County Engineer, Waco.
WINKLER, A., 1900, I, Farmer, The Grove.
WIPPRECHT, W., 1884, I, B. S. A., 1899, Manager of the Bryan Press Co. and Tax Collector Brazos County, Bryan.
WISDOM, F. L., 1896, IV, Bookkeeper for Frost-Johnson Lumber Co., Shreveport, La.
WISE, W. F., 1909, IV, M., L. & T. R. R., Lafayette, La.
WISRODT, C. E. P., 1915, I, Manager Wisrodt Grain Co., Rosenberg. Home Address, Galveston.
WOOD, C. A., 1915, I, M. S., Associate Professor of Agronomy, College Station.
WOOD, E. G., 1911, IV, with Texas Bitulithic Co., 607 Scarbrough Bldg., Austin.
WOOD, W. M., 1888, IV, Assistant Disbursing Officer, I. C. Commission, Empire, Canal Zone.
WOODALL, HOWARD, 1905, III, Clerk P. O. Service, San Marcos.
WOODS, H. A., 1911, IV, Newton.
WOODS, HENRY. S., 1905, V. E. E., 1907, Sales Agent General Electric Co., 510 Dwight Bldg., Kansas City, Mo.
WOODWARD, W. F., 1886, III, Banker, Denton.
WORTHING, E. E., 1903, III, Signal Supervisor Sunset-Central Lines, Houston.
WRAY, JAY, 1908, V, Center Point.
WRIGHT, A. A., 1906, I, Stockman, Alfred.
WRIGHT, B. F., 1911, V, Merchant, 2112 Morrow St., Waco.
WRIGHT, H. L., 1886, III, Insurance, Palestine.
WURTZBACH, W. A., 1888, IV, Lawyer, San Antonio.
WYCHE, T. S., 1910, V, Superintendent Hydro. Elec. Station, Victor, Col.
WYSE, IRA O., 1901, I, Dallas.
WYSE, J. T., Jr., 1905, I, Traveling Salesman Texas Oil Co., Greenville.
YAKEY, H. G., 1906, I, Farmer, Taylor.
YARBROUGH, R. W., 1901, III, Merchant and Planter, Red River Parish, Greening, La.
YEARY, H. E., 1915, I, Farm Manager, Farmersville.
YEARY, J. C., 1915, I, Farmersville.
YOUNG., M. H., 1907, VI, Farmer, Primm.
YOUNG, M. H., 1913, I, Instructor in Agronomy, College Station.
YOUNG, R. L., 1915, V, Post Graduate Student, College Station. Home Address, Hallettsville.
YOUNGBLOOD, B., 1902, I, M. S., 1907, Director of Texas Agricultural Experiment Station, College Station.
YOUNGBLOOD, TOM, 1912, I, Demonstration Agent, Belton.
ZUBER, N. D., 1915, II, Citrus Canker Eradication Work. Home Address, Bryan.

NUMBER OF GRADUATES BY CLASSES.

Class of 1878	2
Class of 1879	23
Class of 1880	7
Class of 1881	1
Class of 1882	12
Class of 1883	8
Class of 1884	14
Class of 1885	10
Class of 1886	11
Class of 1887	10
Class of 1888	17
Class of 1889	19
Class of 1890	14
Class of 1891	16
Class of 1892	25
Class of 1893	15
Class of 1894	31
Class of 1895	27
Class of 1896	22
Class of 1897	27
Class of 1898	23
Class of 1899	22
Class of 1900	26
Class of 1901	19
Class of 1902	27
Class of 1903	36
Class of 1904	36
Class of 1905	39
Class of 1906	46
Class of 1907	45
Class of 1908	49
Class of 1909	47
Class of 1910	69
Class of 1911	98
Class of 1912	98
Class of 1913	114
Class of 1914	71
Class of 1915	92
	1268
Counted twice	8
Total graduates	1260
Deceased	55
	1205

APPENDIX.

CURRICULA FOR THE CLASSES OF '17, '18.

Course numbers refer to descriptions in the 38th annual catalogue.

In the engineering Courses, juniors and seniors are required to attend an engineering assembly once a week.

I. COURSE IN AGRICULTURE.

GROUP A. AGRONOMY.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agronomy 3 Farm Crops	3	2	Agronomy 3 Farm Crops	3	2
Chemistry 2 Agricultural	3	0	Agronomy 11 Soil Mapping	0	2
Chemistry 3 Agricultural Analysis	0	4	Chemistry 2 Agricultural	3	0
English 4 Advanced Composition	3	0	Chemistry 3 Agricultural Analysis	0	2
Entomology 1 Systematic	2	2	English 4 Advanced Composition	3	0
Veterinary Medicine 2 Pharmacology	2	2	Entomology 2 Economic	2	2
			Veterinary Medicine 3 Non-infectious Diseases	2	2
	13	10		13	10

ELECTIVE.

One of the following.

Agricultural Education 1 Psychology	3	0	Agricultural Education 4 Methods	3	0
Biology 3 Rural Hygiene	2	2	Biology 3 Rural Hygiene	2	2
Chemistry 4a Organic	2	2	Chemistry 4a Organic	2	2
Civil Engineering 2a Surveying	2	4	Agricultural Engineering 4 Irrigation	2	2
Language 1, 3 or 5	3	0	Language 1, 3 or 5	3	0

SENIOR YEAR.

Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Economics 3, Economic Organization or Language	3	0	Economics 3, Economic Organization or Language	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Military Science 2	1	0	Textile Engineering 5 Cotton Classing	1	0
Elective	13	0	Elective	11	0
	21	2		19	2

GROUP B. HORTICULTURE.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 2 Agricultural	3	0	Chemistry 2 Agricultural	3	0
Chemistry 3 Agricultural Analysis	0	4	Chemistry 3 Agricultural Analysis	0	2
English 4 Advanced Composition	3	0	English 4 Advanced Composition	3	0
Entomology 1 Systematic	2	2	Entomology 2 Economic	2	2
Horticulture 3 Tree and Vine Fruits	3	2	Horticulture 4 Plant Breeding	2	2
*Agronomy 3 Farm Crops	3	2	Horticulture 5 Spraying	1	2
			Horticulture 6 Nut Culture	2	2
	14	10		13	10

*Or Veterinary Medicine 2	2	2

ELECTIVE.

One of the following.

Agricultural Education 1 Psychology	3	0	Agricultural Education 4 Methods	3	0
Biology 3 Rural Hygiene	2	2	Biology 3 Rural Hygiene	2	2
Chemistry 4a Organic	2	2	Chemistry 4a Organic	2	2
Civil Engineering 2a Surveying	2	4	Agricultural Engineering 4 Irrigation	2	2
Language 1, 3, or 5	3	0	Language 1, 3, or 5	3	0
Forestry 301 Principles of Forestry	2	2	Horticulture 12 Landscape Art	2	2

SENIOR YEAR.

Language or Economics 3 Economic Organization	3	0	Language or Economics 3 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Horticulture 7 Pomology	3	2	Horticulture 9 Experimental	2	2
Military Science 2	1	0	Textile Engineering 5 Cotton Classing	1	0
Elective	13	0	Elective	12	0
	21	2		19	2

GROUP C. ANIMAL HUSBANDRY.

JUNIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Agronomy 3 Farm Crops	3	2	Agronomy 3 Farm Crops	3	2
Animal Husbandry 5 Breeding	2	2	Animal Husbandry 5 Breeding	2	2
Chemistry 2 Agricultural	3	0	Chemistry 2 Agricultural	3	0
Chemistry 3 Agricultural Analysis	0	4	Chemistry 3 Agricultural Analysis	0	2
English 4 Advanced Composition	3	0	English 4 Advanced Composition	3	0
Veterinary Medicine 2 Pharmacology	2	2	Veterinary Medicine 3 Non-infectious Diseases	2	2
			Veterinary Medicine 4 Obstetrics	2	2
	13	10		15	10

ELECTIVE.

One of the following.

Agricultural Education 1 Psychology	3	0	Agricultural Education 4 Methods	3	0
Biology 3 Rural Hygiene	2	2	Biology 3 Rural Hygiene	2	2
Chemistry 4a Organic	2	2	Chemistry 4a Organic	2	2
Entomology 1 Systematic	2	2	Entomology 2 Economic	2	2
Language 1, 3, or 5	3	0	Language 1, 3, or 5	3	0

SENIOR YEAR.

Animal Husbandry 7 Feeding	3	2	Animal Husbandry 7 Feeding	3	2
Economics 3 Economic Organization or Language 2, 4, or 6	3	0	Economics Economic Organization or Language 2, 4, or 6	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Military Science 2	1	0	Veterinary Medicine 5 Infectious Diseases	2	0
Elective	13	0	Elective	10	0
	21	2		19	2

SENIOR ELECTIVES—GROUPS A, B, C, E.

The Senior electives in Groups A, B, C, E, are to be chosen from the following list, subject to the advice and direction of the Faculty designated for the purpose.

First Term.	Hours per week.	
	Rec.	Pr.
Agricultural Education 3 School Administration	3	0
Agricultural Education 4 Methods	3	0
*Agricultural Education 403 Rural Education	3	0
*Agricultural Education 405 Vocational	3	0
†Agricultural Engineering 2 Farm Machinery	2	2
Agronomy 5 Advanced Soils	2	2
Agronomy 6 Farm Management	3	2
Agronomy 8 Plant Breeding	2	2
Agronomy 12 Marketing Problems	3	2
Agronomy 13 Cost Accounting	2	2
Animal Husbandry 8 Advanced Judging	1	4
Animal Husbandry 10 Poultry Judging	2	2
Animal Husbandry 11 Poultry Feeding and Management	2	2
Biology 4 Plant Diseases	3	2
Biology 5 Plant Physiology	2	4
Biology 6 Bacteriology	2	4
Chemistry 6 Advanced Agricultural Analysis	2	6
Chemistry 7 Physical Chemistry	2	4
Dairy Husbandry 7 Breeding and Feeding	3	2
Entomology 3 Fruit Insects	2	2
*Forestry 301 Principles of Forestry	3	0
*Forestry 401 Dendrology	3	0
Horticulture 13 Landscape Design	3	4
Horticulture 14 History of Landscape Design	2	0
Veterinary Medicine 6 Anatomy	3	6
Veterinary Medicine 7 Advanced Laboratory Methods	3	0

Second Term.	Hours per week.	
	Rec.	Pr.
Agricultural Education 5 High School Problems	3	0
Agricultural Education 6 High School Agriculture	3	0
*Agricultural Education 404 Agr. Extension and Demon.	3	0
†Agricultural Engineering 6 Farm Powers	2	4
Agricultural Engineering 12 Repairing	1	4
Agronomy 6 Farm Management	3	2
Agronomy 8 Plant Breeding	2	2
Agronomy 10 Crop Ecology	2	2
Agronomy 12 Marketing Problems	3	2
Agronomy 14 Advanced Farm Management	1	4
Animal Husbandry 11 Poultry Feeding and Man.	2	2
Animal Husbandry 12 Incubation and Brooding	1	4
Biology 4 Plant Diseases	3	2
Biology 5 Plant Physiology	2	4
Biology 6 Bacteriology	2	4
Chemistry 6 Advanced Agricultural Analysis	2	6
Chemistry 8 Advanced Agricultural	2	4
Entomology 4 Advanced Entomology		
*Forestry 302 Silviculture	2	2
*Forestry 402 Wood Technology	2	2
Horticulture 10 Citrus Fruits	2	2
Horticulture 11 Floriculture, Landscape Gardening	2	2
Horticulture 11a Floriculture	2	2
Horticulture 13 Landscape Design	3	4
Horticulture 16 Ornamentals	2	2
Veterinary Medicine 6 Anatomy	3	6
Veterinary Medicine 7 Advanced Laboratory Methods	3	0

The amount of work to be elected, expressed in term hours, is as follows:

	First Term.	Second Term.
Group A	13	11
Group B	13	12
Group C	13	10
Group E	3	3

*Described in the 40th catalogue.

†Described in the 38th catalogue under the Department of Agronomy.

GROUP D. DAIRY HUSBANDRY.

JUNIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Agronomy 3 Farm Crops	3	2	Agronomy 3 Farm Crops	3	2
Chemistry 2 Agricultural	3	0	Chemistry 2 Agricultural	3	0
Chemistry 3 Agricultural Analysis	0	4	Chemistry 3 Agricultural Analysis	0	2
Chemistry 4a Organic	2	2	Chemistry 4a Organic	2	2
English 4 Advanced Composition	3	0	English 4 Advanced Composition	3	0
Dairy Husbandry 2 Dairy Machinery	3	4	Dairy Husbandry 3 Butter Making	2	2
			Veterinary Medicine 4 Obstetrics	2	2
	14	12		15	10

ELECTIVE.

One of the following.

Agricultural Education 1 Psychology	3	0	Agricultural Education 4 Methods	3	0
Language 1, 3, or 5	3	0	Language 1, 3, or 5	3	0
Veterinary Medicine 2 Pharmacology	2	2	Veterinary Medicine 3 Non-infectious Diseases	2	2

SENIOR YEAR.

Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Animal Husbandry 6 Breeding and Feeding	3	2	Chemistry 9 Dairy	2	6
Biology 7 Dairy Bacteriology	2	4	Biology 7 Dairy Bacteriology	2	4
Dairy Husbandry 4 Creamery Management	3	2	Dairy Husbandry 5 Ice Cream Making	3	2
Economics 3 Economic Organization			Economics 3 Economic Organization		
or Language 2, 4, or 6	3	0	or Language 2, 4, or 6	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Military Science 2	1	0	Veterinary Medicine 5 Infectious Diseases	2	0
	16	10		16	14

GROUP E. AGRICULTURAL ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Agronomy 3 Farm Crops	3	2	Agronomy 3 Farm Crops	3	2
Chemistry 2 Agricultural	3	0	Chemistry 2 Agricultural	3	0
Chemistry 3 Agricultural Analysis	0	4	Chemistry 3 Agricultural Analysis	0	2
English 4 Advanced Composition	3	0	English 4 Advanced Composition	3	0
Civil Engineering 2a Surveying	2	4	Agricultural Engineering 4 Irrigation	2	2
Agricultural Engineering 2 Farm Machinery	2	2	Agricultural Engineering 5 Drainage	2	2
Agricultural Engineering 3 Farm Buildings	2	2	Agricultural Engineering 6 Gas Engines	2	4
	16	14		15	12

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Economics 3 Economic Organization	3	0	Economics 3 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Agricultural Engineering 7 Farm Tractors	1	4	Agricultural Engineering 10 Farm Tractor Problems	1	4
Agricultural Engineering 8 Concrete on the Farm	1	4	Agricultural Engineering 11 Automobiles	2	2
Agricultural Engineering 9 Powers and Pumps	3	0	Agricultural Engineering 12 Repairing Farm Machinery	1	4
Military Science 2	1	0	Elective	2	2
Elective	2	2			
	15	12		13	14

IX. COURSE IN ARCHITECTURE.

JUNIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Architecture 30 History of Architecture	2	0	Architecture 35 Heating and Ventilating	1	0
Architecture 31 Masonry Construction	2	0	Architecture 36 Steel Construction	2	2
Architecture 32 Masonry Construction	0	2	**Architecture 37 Freehand Drawing	0	4
Architecture 34 Building Sanitation	1	0	Architecture 39a Architectural Design	0	14
**Architecture 37 Freehand Drawing	0	4	Chemistry 1a Inorganic	3	2
Architecture 39a Architectural Design	0	10	Civil Engineering 12 Stresses	2	2
Chemistry 1a Inorganic	3	2	Electrical Engineering 6 Lighting and Wiring	1	0
Civil Engineering 6 Mechanics of Materials	4	2	*Language 2, 4, or 6	3	0
*Language 2, 4, or 6	3	0			
	15	20		12	24
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0

**Not required of students electing Language.

SENIOR YEAR.

First Term.	Hours per week. Rec.	Hours per week. Pr.	Second Term.	Hours per week. Rec.	Hours per week. Pr.
Architecture 40 History of Ornament	2	0	Architecture 41 Business Practice	1	0
Architecture 43 Architectural Design	0	16	Architecture 42 Hist. of Sculpture and Painting	2	0
Architecture 45 Building Construction	0	4	Architecture 43 Architectural Design	0	18
Architecture 47 Freehand Drawing	0	4	Architecture 45 Building Construction	0	4
Civil Engineering 14 Stresses	2	2	Architecture 47 Freehand Drawing	0	4
Economics 4 Economic Organization	3	0	Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Military Science 2	1	0			
	9	26		7	26

VII. COURSE IN ARCHITECTURAL ENGINEERING.

JUNIOR YEAR.

Architecture 30 History of Architecture	2	0	Architecture 36 Steel Construction	2	2
Architecture 31 Masonry Construction	2	0	Architecture 39 Architectural Design	0	8
Architecture 33 Masonry Construction	0	4	Chemistry 1a Inorganic	3	2
Architecture 34 Building Sanitation	1	0	Civil Engineering 10 Masonry Construction	3	0
Architecture 38 Freehand Drawing	0	4	Civil Engineering 12 Stresses	2	2
Architecture 39 Architectural Design	0	8	Physics 7 General	2	0
Chemistry 1a Inorganic	3	2	Physics 9 General	0	2
Civil Engineering 6 Mechanics of Materials	4	2	*Language 2, 4, or 6	3	0
*Language 2, 4, or 6	3	0			
	15	20		15	16
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0
			and Mechanical Eng. 3 Elem. Steam Eng.	3	0

SENIOR YEAR.

Architecture 44 Architectural Design	0	8	Architecture 35 Heating and Ventilating	1	0
Architecture 46 Building Construction	0	11	Architecture 41 Business Practice	1	0
Civil Engineering 14 Stresses	2	2	Architecture 46 Building Construction	0	16
Civil Engineering 18 Reinforced Concrete	2	0	Chemistry 10 Geology	4	2
Economics 4 Economic Organization	3	0	Civil Engineering 23 Higher Structures	2	2
English 6 Public Speaking	1	0	Economics 4 Economic Organization	3	0
*Mechanical Engineering 3 Elem. Steam Eng.	3	0	Electrical Engineering 6 Lighting and Wiring	1	0
Military Science 2	1	0	English 6 Public Speaking	1	0
	12	21		13	20
*Or Mech. Eng. 5a Steam Engines and Boilers	2	0			

for students who did not elect Language.

VIII. COURSE IN CHEMICAL ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.
Chemical Engineering 1 Industrial Chemistry	3	0
Chemical Engineering 2 Quantitative Analysis	0	4
Chemistry 4 Organic	2	2
Chemistry 5 Economic Geology	2	2
Civil Engineering 7 Hydraulics	2	0
Mathematics 6 Practical	2	0
Mechanical Engineering 3 Elem. Steam Eng.	3	0
Mechanical Engineering 15 Wood Turning	0	4
*Language 2, 4, or 6	3	0
	17	8
*Or English 5 Argumentation	1	0
and Civil Engineering 16 Contracts	2	0

Second Term.	Hours per week. Rec.	Pr.
Chemical Engineering 3 Metallurgy	3	0
Chemical Engineering 4 Silicate Analysis	0	4
Chemistry 4 Organic	2	2
Civil Engineering 6a Mechanics of Materials	2	2
Civil Engineering 7 Hydraulics	2	0
Electrical Engineering 5 Electrical Machinery	4	3
*Language 2, 4, or 6	3	0
	16	11
*Or English 5 Argumentation	1	0
and Mechanical Eng. 4 Kinematics	3	0

SENIOR YEAR.

First Term.	Rec.	Pr.
Chemical Engineering 5 Physical Chemistry	3	2
Chemical Engineering 6 Technical Analysis	2	6
Civil Engineering 15 Water Supply Eng.	2	0
Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 5 Steam Engines and Boilers	3	0
Mechanical Engineering 6 Engineering Mechanics	2	0
Mechanical Engineering 22a Engineering Laboratory	0	2
Military Science 2	1	0
	17	10

Second Term.	Rec.	Pr.
Chemical Engineering 5 Physical Chemistry	3	2
Chemical Engineering 6 Technical Analysis	2	6
Chemistry 11 History of Chemistry	1	0
Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 5 Steam Engines and Boilers	3	0
Mechanical Engineering 6 Engineering Mechanics	2	0
Mechanical Engineering 22a Engineering Laboratory	0	2
	15	10

IV. COURSE IN CIVIL ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.
Chemistry 1a Inorganic	3	2
Civil Engineering 5 Railroad Engineering	2	3
Civil Engineering 6 Mechanics of Materials	4	2
Civil Engineering 7 Hydraulics	2	0
**Drawing 9 Topographical	0	2
Electrical Engineering 5 Electrical Machines	4	0
Mathematics 6 Practical	2	0
*Language 2, 4, or 6	3	0
	18	9
*Or English 5 Argumentation	1	0

Second Term.	Hours per week. Rec.	Pr.
Chemistry 1a Inorganic	3	2
Civil Engineering 7 Hydraulics	2	2
Civil Engineering 8 Graphics	0	4
Civil Engineering 9 Roads	2	0
Civil Engineering 10 Masonry Construction	3	0
Civil Engineering 11 Roofs and Bridges	2	0
Electrical Engineering 5 Electrical Machinery	0	3
Mechanical Engineering 3 Elem. Steam Eng.	3	0
*Language 2, 4, or 6	3	0
	15	11
*Or English 5 Argumentation	1	0
And Biology 8	1	4

**Students electing language do not take Drawing 9.

Summer Practice, Civil Engineering 24, 4 weeks.

SENIOR YEAR.

Civil Engineering 13 Roofs and Bridges	4	8
Civil Engineering 15 Water Supply Eng.	2	0
Civil Engineering 16 Contracts and Specifications	2	0
Civil Engineering 17 Irrigation and Drainage	2	0
Civil Engineering 18 Reinforced Concrete	2	0
Civil Engineering 19 Field and Lab. Work	0	4
Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 22a Engineering Laboratory	0	2
Military Science 2	1	0
	17	14

Civil Engineering 13 Roofs and Bridges	0	4
Civil Engineering 19 Field and Lab. Work	0	4
Civil Engineering 20 Sewerage	2	0
Civil Engineering 22 Higher Structures	3	2
Civil Engineering 25 Modern Pavements	3	0
Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Chemistry 10 Geology	4	2
	16	12

HIGHWAY GROUP.

SENIOR YEAR.

First Term.	Hours per week.	
	Rec.	Pr.
Civil Engineering 13a Roofs and Bridges	2	8
Civil Engineering 16 Contracts and Specifications	2	0
Civil Engineering 18 Reinforced Concrete	2	0
Civil Engineering 19 Field and Lab. Work	0	4
Civil Engineering 421 Highway Laws, Economics, Organization	2	0
Civil Engineering 429a Bituminous Materials and Surfaces	4	0
Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 22a Engineering Laboratory	0	2
Military Science 2	1	0
	17	14

Second Term.	Hours per week.	
	Rec.	Pr.
Civil Engineering 13 Roofs and Bridges	0	4
Civil Engineering 19 Field and Lab. Work	0	4
Civil Engineering 22 Higher Structures	3	2
Civil Engineering 422a Non-Bituminous Pavements	5	0
Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Chemistry 10 Geology	4	2
	16	12

V. COURSE IN ELECTRICAL ENGINEERING.

JUNIOR YEAR.

Chemistry 1a Inorganic	3	2
Civil Engineering 6 Mechanics of Materials	4	2
Electrical Engineering 3 Direct Currents	3	4
Mathematics 6 Practical	2	0
Mechanical Engineering 3 Elem. Steam Eng.	3	0
Mechanical Engineering 19a Machine Shop Practice	0	2
*Language 2, 4, or 6	3	0
	18	10
*Or English 5 Argumentation	1	0
and Civil Engineering 7 Hydraulics	2	0

Chemistry 1a Inorganic	3	2
Civil Engineering 3 Surveying and Leveling	2	2
Electrical Engineering 3 Direct Currents	0	4
Electrical Engineering 4 Electric Lighting	2	0
Electrical Engineering 12 Telephone Engineering	2	2
Electrical Engineering 13 Elem. Alt. Currents	3	0
Mechanical Engineering 4 Kinematics	3	0
*Language 2, 4, or 6	3	0
	18	10
*Or English 5 Argumentation	1	0
and Civil Engineering 7 Hydraulics	2	0

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Electrical Engineering 8a..... Alternating Currents	3	4	Electrical Engineering 8a..... Alternating Currents	5	4
Electrical Engineering 9a..... Electrical Machine Design	3	4	Electrical Engineering 9a..... Electrical Machine Design	1	4
Electrical Engineering 10..... Electric Railways	2	0	Electrical Engineering 10..... Electric Railways	2	0
Civil Engineering 16.......... Contracts and Specifications	2	0	Electrical Engineering 11..... Electric Power Distribution	2	0
Economics 4 .... Economic Organization	3	0	Economics 4 .... Economic Organization	3	0
English 6 .... Public Speaking	1	0	English 6 .... Public Speaking	1	0
Mechanical Engineering 5a.... Steam Engines and Boilers	2	0	Mechanical Engineering 5a.... Steam Engines and Boilers	2	0
Mechanical Engineering 22a... Engineering Laboratory	0	2	Mechanical Engineering 22a... Engineering Laboratory	0	2
Military Science 2............	1	0			
	17	10		16	10

III. COURSE IN MECHANICAL ENGINEERING.

JUNIOR YEAR.

Chemistry 1a .... Inorganic	3	2	Chemistry 1a .... Inorganic	3	2
Civil Engineering 6........... Mechanics of Materials	4	2	Civil Engineering 12.......... Stresses	2	2
Mathematics 6 .... Practical	2	0	Electrical Engineering 5...... Electrical Machinery	4	3
Mechanical Engineering 5..... Steam Engines and Boilers	3	0	Mechanical Engineering 5..... Steam Engines and Boilers	3	0
Mechanical Engineering 6..... Engineering Mechanics	2	0	Mechanical Engineering 6..... Engineering Mechanics	2	0
Mechanical Engineering 18.... Machine Design	0	3	Mechanical Engineering 18.... Machine Design	0	3
Mechanical Engineering 19.... Machine Shop Practice	0	4	Mechanical Engineering 19.... Machine Shop Practice	0	4
*Language 2, 4, or 6..........	3	0	*Language 2, 4, or 6..........	3	0
	17	11		17	14
*Or English 5................ Argumentation	1	0	*Or English 5................ Argumentation	1	0
and Mechanical Eng. 10...... Graphic Statics of Mach.	2	0	and Mechanical Eng. 11...... Pumping Machinery	2	0

SENIOR YEAR.

Chemical Engineering 1....... Industrial Chemistry	3	0	Chemical Engineering 3...... Metallurgy	3	0
Civil Engineering 7........... Hydraulics	2	0	Civil Engineering 7........... Hydraulics	2	2
Economics 4 .... Economic Organization	3	0	Economics 4 .... Economic Organization	3	0
English 6 .... Public Speaking	1	0	English 6 .... Public Speaking	1	0
Mechanical Engineering 7..... Thermodynamics	4	0	Mechanical Engineering 8..... Engineering Design	3	0
Mechanical Engineering 8..... Engineering Design	3	0	Mechanical Engineering 9..... Gas Engines	2	0
Mechanical Engineering 20.... Machine Shop Practice	0	2	Mechanical Engineering 7..... Thermodynamics	2	0
Mechanical Engineering 21.... Engineering Design	0	4	Mechanical Engineering 21.... Engineering Design	0	4
Mechanical Engineering 22.... Engineering Laboratory	0	4	Mechanical Engineering 22.... Engineering Laboratory	0	6
Military Science 2............	1	0			
	17	10		16	12

VI. COURSE IN TEXTILE ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week. Rec.	Pr.	Second Term.	Hours per week. Rec.	Pr.
Chemistry 4 Organic	2	2	Chemistry 4 Organic	2	2
Mechanical Engineering 19b Machine Shop Practice	0	4	Electrical Engineering 5 Electrical Machinery	4	3
Textile Engineering 2a Yarn Manufacturing	6	2	Textile Engineering 5 Cotton Classing	1	0
Textile Engineering 3 Designing	3	0	Textile Engineering 2a Yarn Manufacture	3	4
Textile Engineering 4 Cotton Classing	1	0	Textile Engineering 3 Designing	3	0
Textile Engineering 6 Power Weaving	2	4	Textile Engineering 6 Power Weaving	2	4
*Language 2, 4, or 6	3	0	*Language 2, 4, or 6	3	0
	17	12		18	13
*Or English 5 Argumentation	1	0	*Or English 5 Argumentation	1	0
and Mechanical Eng. 5a Steam Engines and Boilers	2	0	and Mechanical Eng. 5a Steam Engines and Boilers	2	0

SENIOR YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Economics 4 Economic Organization	3	0	Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Textile Engineering 7 Yarn Manufacture	3	4	Textile Engineering 7 Yarn Manufacture	3	4
Textile Engineering 8 Designing	4	0	Textile Engineering 8 Designing	4	0
Textile Engineering 9 Power Weaving	2	4	Textile Engineering 9 Power Weaving	2	6
Chemistry 12 Dyeing	2	2	Textile Engineering 10 Yarn Manufacture	2	0
			Textile Engineering 11 Mill Management	2	0
Military Science 2	1	0			
	16	10		17	10

COURSE IN CHEMICAL ENGINEERING.

(Leading to the Degree of Chemical Engineer.)

FIFTH YEAR.

First Term.	Rec.	Pr.	Second Term.	Rec.	Pr.
Chemical Engineering 11 Adv. Ind. Chemistry	2	12	Chemical Engineering 11 Adv. Ind. Chemistry	2	12
Chemical Engineering 12 Rarer Elements	2	4	Chemical Engineering 13 Chem. Preparations	2	4
Elective	6	0	Elective	6	0

COURSE IN CIVIL ENGINEERING.

(Leading to the Degree of Civil Engineer.)

FIFTH YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Rec.	Pr.		Rec.	Pr.
Civil Engineering 31 Astronomy	2	0	Civil Engineering 32 General Civil Engineering	2	2
Civil Engineering 11 Least Squares	2	0	Civil Engineering 14 Contracts	2	0
Civil Engineering 12 Bridge Designing	3	2	Civil Engineering 11 Geodesy	2	0
Civil Engineering 32 General Civil Engineering	2	2	Civil Engineering 12 Bridge Designing	3	2
Elective	6	4	Elective	6	4

COURSE IN ELECTRICAL ENGINEERING.

(Leading to the Degree of Electrical Engineer.)

(For students receiving their bachelor's degree after June, 1913.)

FIFTH YEAR.

Electrical Engineering 31 Adv. Alternating Currents	3	0	Electrical Engineering 31 Adv. Alternating Currents	3	0
Electrical Engineering 32 Electric Machine Design	3	0	Electrical Engineering 34 Power Plant Design	3	0
Electrical Engineering 33 Gen. Electrical Engineering	3	0	Electrical Engineering 33 Gen. Electrical Engineering	3	0
Electrical Engineering 35 Laboratory	0	8	Electrical Engineering 35 Laboratory	0	8
Elective	6	0	Elective	6	0

COURSE IN MECHANICAL ENGINEERING.

(Leading to the Degree of Mechanical Engineer.)

FIFTH YEAR.

Mechanical Engineering Analytical Mechanics	3	0	Mechanical Engineering Analytical Mechanics	3	0
Mechanical Engineering Steam Turbines	3	0	Mechanical Engineering Gas Producers	3	0
Mechanical Engineering Refrigeration	3	0	Mechanical Engineering Power Plants	3	0
Mechanical Engineering	0	8	Mechanical Engineering	0	8
Elective	6	0	Elective	6	0

COURSE IN TEXTILE ENGINEERING.

(Leading to the Degree of Textile Engineering.)

FIFTH YEAR.

Textile Engineering 4 Yarn Manufacture	3	4	Textile Engineering 4 Yarn Manufacture	4	0
Textile Engineering 10 Weaving	2	4	Textile Engineering 13 Designing	4	0
Textile Engineering 13 Designing	4	0	Textile Engineering 15 Mill Management	2	0
Elective	6	2	Textile Engineering 10	0	4
			Elective	6	2

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BULLETIN

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

Third Series, Vol. 3 JUNE 1, 1917 No. 11

FORTY-FIRST

ANNUAL CATALOGUE

SESSION 1916-17

ANNOUNCEMENTS FOR 1917-18

Published semi-monthly by the Agricultural and Mechanical College
of Texas

Entered as second class matter August 7, 1913, at the postoffice at College Station, Texas,
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CALENDAR

1917

JULY

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COLLEGE CALENDAR.

1917.

First Term begins Wednesday, September 19.
Entrance Examinations, Wednesday, Thursday, September 19, 20.
Registration, September 19, 20.
Recitations begin Friday, September 21.
Opening exercises, Assembly Hall, September 21, 10 a. m.
National Holiday, Thanksgiving Day.
Christmas Holidays begin Friday, December 21, 4 p. m.

1918.

Last day of the Christmas Holidays, Wednesday, January 2.
Recitations resumed, Thursday, January 3, 8 a. m.
Second Term begins Saturday, January 26.
Registration for Second Term, January 26.
February 22, Washington's Birthday.
March 2, Texas Independence Day.
April 21, San Jacinto Day.
Commencement Sermon, Sunday, May 26.
Exhibition of Departments and of Work of Students, May 27.
Commencement Day, May 28.

BOARD OF DIRECTORS.

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L. J. HART, Vice-President.

Terms Expire 1919.

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JOHN I. GUION	*Ballinger.*
L. J. HART	*San Antonio.*

Terms Expire 1921.

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J. R. KUBENA	*Fayetteville.*
W. A. MILLER	*Amarillo.*

Terms Expire 1923.

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JOHN T. DICKSON	*Paris.*

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Assistant Professor of Mathematics.

J. D. GARNER, A. M., LL. B.,
Assistant Professor of Mathematics.

H. E. HAYDEN, M. A.,
Assistant Professor of Biology.

---

*Resigned November 30, 1916.

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Assistant Professor of Drawing.

D. C. JONES, B. A.,
Assistant Professor of Mathematics.

I. C. NICHOLS, M. A., M. S.,
Assistant Professor of Mathematics.

W. H. McPHEETERS, B. S.,
Assistant Professor of Physics.

D. B. COFER, A. B.,
Assistant Professor of English.

F. J. SKEELER, B. S.,
Assistant Professor of Physics.

H. CASSIDAY, A. M.,
Assistant Professor of Biology.

J. A. CLUTER, B. S.,
Assistant Professor of Dairy Husbandry.

I. E. COWART, M. S.,
Assistant Professor of Horticulture.

*ROBIN BEACH, B. S.,
Assistant Professor of Electrical Engineering.

W. T. MAGEE, B. S. A.,
Assistant Professor of Animal Husbandry.

LEROY RHODES, B. S.,
Assistant Professor of Agricultural Engineering.

T. J. CONWAY, B. S.,
Assistant Professor of Animal Husbandry.

W. WIPPERMANN, B. S.,
Assistant Professor of Mechanical Engineering.

D. J. BROWN, M. A.,
Assistant Professor of Chemistry.

R. M. GREEN, M. Sc.,
Assistant Professor of Highway Engineering.

C. S. WHITNEY, V. M. D.,
Assistant Professor of Pathology.

L. H. WRIGHT, D. V. M.,
Assistant Professor of Physiology and Pharmacology.

J. D. BOND, A.M.,
Assistant Professor of Mathematics.

P. G. GUNTER, M. A.,
Assistant Professor of English.

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*Resigned December 31, 1916.

L. L. CLICK, B. S. E.,
Assistant Professor of English.

C. H. FARR, M. S., Ph. D.,
Assistant Professor of Biology.

W. G. JAMES, B. S.,
Assistant Professor of Electrical Engineering.

H. F. PAGE, M. A.,
Assistant Professor of English.

T. F. MAYO,
Assistant Professor of English.

W. H. H. MORRIS, Lieutenant, Infantry, U. S. A.,
Assistant Professor of Military Science and Tactics.

H. T. DYSLAND,
Assistant Professor of Architecture.

W. A. BROYLES, B. S., M. A.,
Assistant Professor of Agricultural Education.

B. O. BETHELL, D. V. M.,
Assistant Professor of Veterinary Medicane and Surgery.

†I. J. SHEPHERD, M. E.,
Assistant Professor of Electrical Engineering.

‡H. R. BRAYTON, A. B., M. S.,
Assistant Professor of Chemistry.

E. O. FRANCISCO, B. S.,
Acting Assistant Professor of Civil Engineering.

J. A. HERRINGTON, B. S.,
Instructor in Mechanical Engineering.

L. L. CHAPPELLE,
Instructor in Mechanical Engineering.

E. E. McADAMS, B. S.,
Instructor in Physics.

E. L. REED, A. B.,
Instructor in Biology.

G. P. WILSON, A. B.,
Instructor in English.

E. F. BATES, M. S.,
Instructor in Physics.

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†From January 27, 1917.
‡From April 1, 1917.

C. E. HANSON, A. B., B. S.,
Instructor in Mechanical Engineering.

G. W. HANSON, B. S.,
Instructor in Mechanical Engineering.

*ALLAN BURTON, B. S.,
Instructor in Architecture.

*GLEN H. MULLIN, A. B.,
Instructor in English.

M. H. YOUNG, B. S.,
Instructor in Agronomy.

†A. E. PARMELEE, B. S.,
Instructor in Chemistry.

C. G. MARTINSON, B. S.,
Instructor in Mechanical Engineering.

B. W. BITTLE, A. M.,
Instructor in English.

C. F. SPARKMAN, B. Pd., M. A., Ph. D.,
Instructor in Modern Languages.

E. LANGFORD, B. S.,
Instructor in Drawing.

J. B. OVERSTREET, B. S.,
Instructor in Chemistry.

E. B. REYNOLDS, M. S.,
Instructor in Agronomy.

*W. T. BRYANT, Ch. E.,
Instructor in Chemistry.

H. B. KRAUSZ,
Instructor in Forestry.

S. L. STANGEL, B. S.,
Instructor in Animal Husbandry.

‡J. C. RIPPERTON, M. A.,
Instructor in Chemistry.

H. C. YINGLING, M. Sc.,
Instructor in Entomology.

E. R. BOWERSOX, B. S., B. E.,
Instructor in Mechanical Engineering.

RAYMOND MATHEWS, B. S.,
Instructor in Drawing.

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*Absent on leave, 1916-1917.

†Resigned March 1, 1917.

‡Resigned March 15, 1917.

†H. P. MAGNUSON, B. S.,
Instructor in Chemistry.

L. P. THOMAS,
Assistant in Dairy Husbandry.

C. A. BERG,
Assistant in Agricultural Engineering.

E. H. STELZIG, B. S.,
Assistant in Mechanical Engineering.

Summary of Teaching Staff as of March 15, 1917.

Professors	28
Associate Professors	19
Assistant Professors	33
Instructors	25
Assistants	3
	108
Absent on leave	3
	105

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†From March 15, 1917.

OTHER OFFICERS OF THE COLLEGE.

B. SBISA,
Supervisor of the Subsistence Department.

S. G. BAILEY,
Secretary to the President.

W. L. DRIVER,
Physical Director.

D. X. BIBLE,
Football Coach.

D. V. GRAVES,
Baseball Coach.

CHARLES FIRTH,
Secretary, Young Men's Christian Association.

J. M. KENNY, Quartermaster Sergeant, U. S. A., Retired.
GEO. SMART, First Sergeant, U. S. A., Retired.
J. C. HYLAND, First Sergeant, U. S. A., Retired.
FRED WALTERS, Sergeant, Infantry, Unassigned.
W. E. LITTLETON, Sergeant, Engineers, Unassigned.
JOHN BIERMAN, Sergeant, Infantry, Unassigned.
Tactical Officers.

JOHN J. HOWARD, First Sergeant, Cavalry, U. S. A., Retired.
F. C. TYLER, First Sergeant, Infantry, U. S. A., Retired.
Night Sergeants.

IKE S. ASHBURN,
Publicity Agent.
Secretary to the Board of Directors.

R. K. CHATHAM,
Manager, Cadet Exchange Store.

TEXAS AGRICULTURAL EXPERIMENT STATION.

Main Station, College Station.

*STATION STAFF.

Administration:

B. YOUNGBLOOD, M. S., *Director.*
A. B. CONNER, B. S., *Vice Director.*
CHAS. A. FELKER, *Chief Clerk.*
A. S. WARE, *Secretary.*

Division of Veterinary Science:

M. FRANCIS, D. V. M., *Veterinarian in Charge.*
H. SCHMIDT, D. V. M., *Veterinarian.*

Division of Chemistry:

G. S. FRAPS, Ph. D., *Chemist in Charge; State Chemist.*
W. T. P. SPROTT, B. S., *Assistant Chemist.*
CHARLES BUCHWALD, M. S., *Assistant Chemist.*
G. B. L. SMITH, M. S., *Assistant Chemist.*

Division of Horticulture:

H. NESS, M. S., *Horticulturist in Charge.*
W. S. HOTCHKISS, *Horticulturist.*

Division of Animal Husbandry:

J. C. BURNS, B. S., *Animal Husbandman, Feeding Investigations.*
J. M. JONES, A. M., *Animal Husbandman, Breeding Investigations.*
L. B. BURK, B. S., *Animal Husbandman, Swine Investigations.*

Division of Entomology:

F. B. PADDOCK, M. S., *Entomologist in Charge; State Entomologist.*
R. J. REINHARD, B. S., *Assistant Entomologist.*

County Apiary Inspectors.

R. C. ABERNATHY, Ladonia.
WILLIAM ATCHLEY, Mathis.
J. W. E. BASHAM, Barstow.
VICTOR BOEER, Jourdanton.
T. W. BURLESON, Waxahachie.
W. C. COLLIER, Goliad.
E. W. COTHRAN, Roxton.
G. F. DAVIDSON, Pleasanton.
JOHN DONEGAN, Seguin.
A. R. GRAHAM, Milano.
J. B. KING, Batesville.
N. G. LeGEAR, Waco.
R. A. LITTLE, Pearsall.
M. C. STEARNS, Brady.
S. H. STEPHENS, Uvalde.
M. B. TALLY, Victoria.
R. E. WATSON, Heidenheimer.
W. H. WHITE, Greenville.
F. C. BELT, Ysleta.

Division of Agronomy:

A. B. CONNER, B. S., *Agronomist in Charge.*
A. H. LEIDIGH, B. S., *Agronomist.*
LOUIS WERMELSKIRCHEN, B. S., *Agronomist.*

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*As of March 1, 1917.

Division of Plant Pathology and Physiology:
J. J. TAUBENHAUS, Ph. D., *Plant Pathologist and Physiologist in Charge.*
A. D. JOHNSON, B. S., *Graduate Assistant.*

Division of Poultry Husbandry:
R. N. HARVEY, B. S., *Poultryman in Charge.*

Division of Plant Breeding:
E. P. HUMBERT, Ph. D., *Plant Breeder in Charge.*
J. S. MOGFORD, B. S., *Graduate Assistant.*

Division of Dairying:
J. E. HARPER, M. S., *Dairyman in Charge.*

Division of Feed Control Service:
JAMES SULLIVAN, *Executive Secretary.*
J. H. ROGERS, *Inspector.*
W. H. WOOD, *Inspector.*
T. H. WOLTERS, *Inspector.*
S. D. PEARCE, *Inspector.*
W. M. WICKES, *Inspector.*

Substations..

No. 1, Beeville, Bee County:
E. E. BINFORD, B. S., *Superintendent.*

No. 2, Troup, Smith County:
W. S. HOTCHKISS, *Superintendent.*

No. 3, Angleton, Brazoria County:
N. E. WINTERS, B. S., *Superintendent.*

No. 4, Beaumont, Jefferson County:
H. H. LAUDE, B. S., *Superintendent.*

No. 5, Temple, Bell County:
D. T. KILLOUGH, B. S., *Superintendent.*

No. 6, Denton, Denton County:
C. H. McDOWELL, B. S., *Superintendent.*

No. 7, Spur, Dickens County:
R. E. DICKSON, B. S., *Superintendent.*

No. 8, Lubbock, Lubbock County:
R. E. KARPER, B. S., *Superintendent.*

No. 9, Pecos, Reeves County:
J. W. JACKSON, B. S., *Superintendent.*

No. 10 (Feeding and Breeding Substation), College Station, Brazos County:
E. R. SPENCE, B. S., *Animal Husbandman, in Charge of Farm.*
G. F. JORDAN, B. S., *Scientific Assistant.*

No. 11, Nacogdoches, Nacogdoches County:
G. T. McNESS, *Superintendent.*

‡No. 12, Chillicothe, Hardeman County:
R. W. EDWARDS, B. S., *Superintendent.*

No. 14, Sonora, Sutton County:
E. M. PETERS, B. S., *Acting Superintendent.*

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‡In cooperation with United States Department of Agriculture.

TEXAS ENGINEERING EXPERIMENT STATION.

D. W. SPENCE, C. E.,
Dean of Engineering.
Director.

ADVISORY COUNCIL.

R. ADELSPERGER, B. A., B. S.,
Professor of Architecture and Architectural Engineering.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

F. B. CLARK, M. A., Ph. D.,
Professor of Economics.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

R. L. MORRISON, M. A.,
Professor of Highway Engineering.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

O. W. SILVEY, A. M., Ph. D.,
Professor of Physics.

H. E. SMITH, M. E.,
Professor of Steam Engineering.

J. B. BAGLEY, B. A.,
Professor of Textile Engineering.

EXTENSION SERVICE.

(Agricultural and Mechanical College of Texas and United States Department of Agriculture Cooperating.)

CLARENCE OUSLEY,
Director.

SETH B. HOLMAN, *Executive Secretary;* J. C. WILLIAMS, *Chief Clerk.*

STAFF.

Farm Demonstration.

T. O. WALTON, *Assistant to Director, In Charge Farm Demonstration Work;* M. T. PAYNE, J. F. BAGWELL, A. W. BUCHANAN, G. W. ORMS, E. GENTRY, WILLIAM GANZER AND J. F. QUICKSALL, *District Agents;* H. H. WILLIAMSON, B. S., and C. C. FRENCH, *State Agents, Boys' Clubs;* J. D. BLACKWELL, B. Pd., B. S. A., *Special Agent, Boys' Clubs.*

Negro Subdivision: R. L. SMITH, 109 Bridge Street, Waco, Texas, *Leader;* J. H. FORD and A. T. WOOD, Prairie View, Texas, *Agronomists;* MRS. M. E. V. HUNTER and PINKIE RHAMBO, Prairie View, Texas, *Demonstrators, Home Economics.*

Home Demonstration.

MISS JESSIE W. HARRIS, B. S., *State Agent, Home Demonstration Work;* MISS KATE LEE HENLEY, *Assistant State Agent;* MISS LILLIAN SHAKLEFORD, Denton, Texas, *District Agent;* —————, Austin, Texas, *District Agent;* MRS. NAT P. JACKSON, A. M. LEADER, *Rural Woman's Work;* MISS CORNELIA SIMPSON and MRS. G. M. GARREN, College Station, Texas, and MRS. BEULAH A. MARSHALL, Dallas, Texas, *Demonstrators, Home Economics.*

Animal Industry.

C. M. EVANS, B. S., M. S. A., *Chief;* J. LYNN THOMAS, B. S., *Dairy Manufacturing Specialist;* R. L. POU, B. S., *Specialist in Dairying;* DON T. GRISWOLD, B. S., *Assistant Animal Husbandman;* F. W. KAZMEIER, *Poultry Husbandman.*

Plant Industry.

W. B. LANHAM, B. S. A., *Chief and Horticulturist;* M. E. HAYS, B. S. A., M. A., *Entomologist;* B. F. BLODGETT, Ph. D., Fort Worth, Texas, *Plant Pathologist;* G. M. GARREN, *Agronomist;* J. A. EVANS, *Pecan Specialist;* J. C. OLSEN, B. S., *Agricultural Engineer.*

Rural Economics.

H. M. ELIOT, M. S. A., *Chief;* WALTON PETEET, H. L. McKNIGHT and DR. R. M. HARKEY, *Special Agents in Organization;* H. B. KILLOUGH, *Specialist in Farm Management.*

ADMINISTRATION OF STATE LAWS.

Feed Control Law.

Administered by the Director ofthe Agricultural Experiment Station.

Fertilizer Law.

G. S. FRAPS, Ph. D.,
State Chemist.

S. E. ASBURY, M. S.,
Assistant State Chemist.

J. W. ENOCHS, B. S.,
G. B. L. SMITH, M. A.,
E. R. HARRUFF, B. S.,
Assistant Chemists.

Foul Brood Law.

F. B. PADDOCK, B. S.,
State Entomologist.

Forestry Law.

J. H. FOSTER, B. S., M. F.,
State Forester.

HARRY B. KRAUSZ,
Technical Assistant.

F. H. MILLEN,
Forestry Agent for East Texas.

HISTORICAL SKETCH.

The Agricultural and Mechanical College of Texas, like the land grant institutions in other States of the Union, owes its origin to an act of Congress approved July 2 ,1862. This act donated public lands to the several States and Territories which might provide colleges for the benefit of agriculture and the mechanic arts, and directed the Secretary of the Interior to issue land scrip to the States in which there was not the requisite quantity of public land. The act further directed that the money derived from this source should constitute a perpetual fund, the principal of which should remain forever undiminished, and the interest of which should be inviolably appropriated by each State to the endowment, support and maintenance of at least one technological college, whose leading subject should be, without excluding other scientific and classical studies, and including military tactics, to teach branches of learning pertaining to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life. It was further provided that the provisions of the act should be formally accepted by the State Legislature. By joint resolution approved November 1, 1866, the Legislature of Texas accepted the provisions of the Congressional legislation, and accordingly there was issued to Texas scrip for 180,000 acres of public land, which was sold for $174,000. This amount was invested in Texas 7 per cent gold frontier bonds. At the time of the opening of the College there was an addition to the fund of accrued interest amounting to $35,000 which was invested in 6 per cent State bonds.

In an act approved April 17, 1871, the Legislature provided for the establishment of the Agricultural and Mechanical College. By the terms of this act and later acts, appropriations aggregating $187,000 were made for buildings and equipment. A commission to locate the College was created by the Legislature. After careful investigation, the commission accepted the proposition of the citizens of Brazos county, and located the institution on a tract of 2416 acres of land in that county. Finally, the constitutional convention of 1876 constituted the College a branch of the University of Texas, and, in accordance with the terms of the Federal legislation, designated it as an institution for instruction in agriculture and the mechanic arts and the natural sciences connected therewith. The convention further provided that the Legislature should have the right to levy taxes for the maintenance and support of the Agricultural and Mechanical College.

The College was formally opened for the reception of students October 4, 1876. By means of financial aid voted by Congress and of appropriations made by the State Legislature, there has been developed a considerable foundation at the College for instruction, for investigation, and for experiment.

The physical plant of the College now includess eight dormitories, an academic building, a Y. M. C. A. building, a mess hall, an assembly hall, an agricultural and horticultural building, a chemical and veterinary building, a civil engineering building, an electrical engineering building, an experiment station building, a mechanical engineering building, a textile engineering building, a hospital, a veterinary hospital, a serum laboratory, a farm implement building, a dairy barn, a stock judging pavilion, a power plant, a laundry, a sewerage system, barns and outhouses and residences for instructors and officers, with a total valuation of appropimately $1,850,000.

GOVERNMENT.

The government of the College is vested in a Board of nine directors, appointed by the Governor for terms of six years.

ADMINISTRATION.

The immediate regulation and direction of the affairs of the College are delegated by the Board of Directors to the President and the Faculty.

ORGANIZATION.

The College comprises the Schools of Agriculture, of Engineering, of Veterinary Medicine; the Agricultural Experiment Station, the Engineering Experiment Station, the Extension Service, and the Summer School.

DEPARTMENTS.

The College has now in operation twenty-five departments of instruction, which are listed under the the caption "Courses of Instruction by Departments."

METHOD AND SCOPE OF INSTRUCTION.

In all Courses the fundamental idea is education in practical science, particularly in agriculture and in engineering. With this idea in view, instruction is given in English, history, economcs, mathematics, physics, chemistry and in other studies which lie at the foundation of a sound education and furnish the best preparation for the more technical studies of the several courses. Instruction is given by the use of textbooks, by lectures and recitations; also by practice in the shop, field, laboratory, and drawing room. These practical exercises have a high educational value, and serve a useful purpose in fixing and rendering clear the ideas presented in the class room; they have also a practical value, for they are, in great measure, examples of just such problems as the scientific agriculturist or engineer will encounter in the pursuit of his calling. For convenience of instruction, the classes are subdivided into sections of suitable size. Unannounced written exercises and tests are given at the discretion of instructors. Regular written examinations are held at the end of each term.

MILITARY ORGANIZATIONS AND DISCIPLINE.

The students of the College constitute the Cadet Corps, which is organized as a band and two regiments of infantry consisting of four battalions of four companies each.

All military instruction is under the immediate charge of the Commandant of Cadets.

The officers and non-commissioned officers are selected from the Senior and Junior classes. They are appointed by the Commandant upon the approval of the President. Their appointments are dependent upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

The main objects of the military instruction are three, as follows:

1. To develop the student physically through drill and other exercises.

2. To develop him mentally by requiring him to perform the duties imposed upon him, which demand tact, thought and initiative.

3. To build character by insisting on proper submission to discipline, which entails self-control, and by insisting on the student's meeting the responsibilities which are placed upon him.

The finished product should be a man or robust health, correct carriage, strong character, with a proper regard for constituted authority.

Students are not allowed to leave the College grounds either to visit neighboring towns, or their homes, without first securing a furlough from the Commandant of Cadets or from the President.

When a student overstays a furlough which extends through the Christmas holidays or the summer vacation, his name will be dropped from the rolls.

For improper conduct, or failure to keep up with his studies, a student may at any time be requored to withdraw from College.

Graduates of the College may be given the opportunity by the War Department of taking a competitive examination for commissions as Second Lieutenant in the regular army; they may obtain commissions as officers in the organization of native troops in the Philippine Islands.

RESERVE OFFICERS' TRAINING CORPS.

The Act of Congress of June 3, 1916, known as the National Defense Act, provides for the establishment in civil educational institutions of a Reserve Officers' Training Corps (R. O. T. C.).

The object of this provision is stated as follows:

"The primary object of establishing units of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, students at civil educational institutions for reserve officers. The system of instruction herein prescribed presents to these students a standardized measure of that military training which is necessary in order to prepare them to perform intelligently the duties of commissioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers."

A unit of the Reserve Officers' Training Corps has been established in this College.

Benefits and Obligations.

Provided the necessary appropriation of funds is made by Congress, members of the R. O. T. C. will receive the benefits mentioned below.

(*a*) *Freshmen, Sophomores, Special, and Short-Course Students.*

Each student of these classes will be furnished free one uniform valued at about ten dollars.

When this uniform, or any article of it, has been worn out by ordinary wear and tear, and condemned, it will be replaced without expense to the student.

The student incurs no obligation except that of properly caring for his uniform and equipment.

(*b*) *Juniors and Seniors.*

In order to continue in the R. O. T. C. during his junior and senior years, the student must have the recommendation of the President and the Commandant.

The student who continues in the R. O. T. C. during his junior and senior years will receive the following benefits:

1. He will receive the uniform referred to above, on the same terms.

2. He will be furnished commutation of subsistence, estimated to amount to seven or nine dollars a month, provided he executes an agreement to continue in the R. O. T. C. during the remainder of his college course, and to take the courses of camp training during such period, prescribed by the Secretary of War.

The camps referred to above involve no expense on the part of the students.

3. After graduation he will be eligible for appointment by the President of the United States as a reserve officer of the Army, and if so appointed, he may, under certain conditions, be appointed and commissioned as a temporary second lieutenant in the Regular Army for the period of six months, with pay at the rate of $100 per month, with the usual allowances.

REPORTS.

In order to keep parents systematically informed concerning the progress of their sons, reports, showing class standing and record of conduct, are sent out from the Dean's office at the end of each term. A preliminary report is sent out soon after December 1.

LOCATION.

The College is situated at College Station, in the county of Brazos, and is 350 feet above sea level. The Houston & Texas Central and the International & Great Northern Railroads run through the grounds, daily trains stopping at the stations, about 650 yards from the academic building. Students and visitors are advised to take trains arriving in the daytime.

POSTOFFICE.

College Station is a money order postoffice. Letters intended for persons at the college should not be directed to Bryan. At College Station there are telegraph and express offices.

HEALTH.

The buildings of the College are situated on the crest of a wide divide, with sufficient slope in every direction to insure proper drainage. The health of the student body, as shown by the daily records of the institution, is all that could be expected at any location in the State.

The work of sanitation is carried on throughout the entire year, with especial reference to the eradication of mosquitoes, flies and other disease-bearing agencies.

Drinking water is supplied by wells varying in depth from 300 feet to 1300 feet.

The baracks are inspected daily, and are kept neat and clean throughout. The rooms are well lighted and comfortable.

Drill, shop and field practice, work and outdoor athletic sports furnish sufficient and varied exercise and contribute very much to the maintenance of health and proper physical development.

There is no endemic disease at the College; most of the sickness is the result of indiscretion on the part of the student, or is due to the introduction of some mild epidemic disease, such as measles or mumps.

PUBLICATIONS.

The following publications are issued by the College:

The Bulletin of the Agricultural and Mechanical College of Texas.—This is a semi-monthly publication which includes the bulletins of the Texas Engineering Experiment Station, the Catalogue of the College, and the announcement of the Summer Session.

The Daily Bulletin.—This is a small sheet issued daily during the regular session, which carries official notices and other announcements.

Bulletins of the Agricultural Experiment Station.—These bulletins are issued from time to time and contain reports of the results of the investigations of the Station.

Extension Service Bulletins.—The Extension Service publishes from time to time bulletins on subjects of popular interest in the field of agriculture and home economics.

In addition, there are issued twice a month an *Extension Service News Letter* of seasonal advice, and numerous circular from time to time covering both matters of general agricultural interest and matters of unexpected development.

Student Publications.—The students of the College publish *The Battalion,* a weekly devoted to student activities and interests. The Senior Class publishes an Annual, *The Longhorn.*

The Young Men's Christian Association publishes at the opening of the session a *Handbook* giving information of value particularly to new students.

CHANGES IN ANNOUNCEMENTS.

The announcements made in this Catalogue are based upon present conditions, and are subject to change without notice.

BUILDINGS.

ACADEMIC BUILDING.

The Academic Building, completed in 1914, is located on the highest part of the Campus and occupies the site of the original Main Building, which was erected in 1876 and destroyed by fire May 27, 1912. It is 89 feet wide and 260 feet long and four stories high. It provides class and lecture rooms for the departments of architecture, drawing, economics, English, history, and mathematics, and quarters for the administrative offices, the library, and the armory; certain other departments have been assigned temporary quarters in this building. The building is constructed of brick and reinforced concrete, and is fireproof.

BERNARD SBISA HALL.

This is a one-story, fireproof building erected in 1912, to replace the Mess Hall destroyed by fire in October, 1911. The dining room has a seating capacity of over 1200, and the appointments of the building are modern in every respect.

Y. M. C. A. BUILDING.

The Y. M. C. A. building, completed in 1914, occupies one of the best locations on the Campus. The building proper is "T" shaped in plan, 89 feet across the facade and 111 feet from front to rear. It is two stories high with the front part surrounded by a wide piazza that forms a portion of the basement story. A barber shop, bowling alleys, locker rooms, shower and swimming pool occupy the basement space. The lobby, auditorium, and secretary's office occupy the first floor, and offices, class rooms and secretary's living rooms the second floor. The building is harmonius, architecturally, with the more recent College buildings, being a twentieth century adaptation of Renaissance *motifs*. The erection of this building was made possible by the gifts of many friends of the College, supplemented by a large contribution from Mr. John D. Rockefeller.

ASSEMBLY HALL.

This is a two-story brick building, erected in 1887, having a main floor and a gallery.

A new auditorium to cost $100,000 is in course of erection.

MECHANICAL ENGINEERING BUILDING.

This building is situated north of the Academic Building and partly houses the Department of Mechanical Engineering. It consists of two distinct parts: First, the one containing the carpenter shop, and section rooms; second, that containing the blacksmith shop, machine shops, wood-turning room, and experimental laboratory. The first mentioned part is a two-tory part, having the carpenter shop on the first floor and the other rooms on the second floor. The second part of the building is a one-story structure, containing the departmental equipment belonging to the work therein cared for; also an additional steam engine which furnishes the power for the shops.

AGRICULTURAL AND HORTICULTURAL BUILDING.

This building, erected in 1899, accommodates the agricultural and horticultural departments of the College by furnishing rooms for class instruction, laboratory investigations, museum purposes, butter and cheese making, pasteurizing milk, seed storeroom, photographic room, and the necessary offices for the accommodation of these departments. This building is 160 feet long and 77 feet wide, two stories high, and covered with slate. It contains twentyseven rooms, fitted with apparatus and machinery for the instruction of students in the several branches of agriculture and horticulture.

CHEMICAL AND VETERINARY BUILDING.

This building, erected in 1902, is 138 feet long and 130 feet deep. It is built of brick and contains two stories and a basement. On the first floor the veterinary department has it office, veterinary laboratory, students' laboratory, dissecting room, operating room, museum, lecture room and apparatus room. The chemical department has on the same floor two storerooms, an assay room and a laboratory for State chemical work.

The second floor comprises the chemical and mineralogical museum, office and private laboratory of the professor of chemistry, two lecture rooms, balance room, two supply rooms and three laboratories for students.

VETERINARY HOSPITAL.

The Veterinary Hospital, erected in 1908, contains a clinic room, 36x36 feet, eight box stalls, four tie stalls, two rooms for dogs, a large colic stall, feed room, medicine room, janitor's room, etc. The building is floored with concrete, with traps from each stall to the sewer, thus permitting the proper isolation of contagious diseases and the thorough disinfection of each stall. An automatic flush tank serves to keep the building in a sanitary condition.

TEXTILE BUILDING.

This building, erected in 1904, is constructed of smooth red brick, according to the plans of on expert mill engineer, and is an excellent example of modern cotton mill construction. The construction is of the slow-burning type generally accepted by American engineers as the most satisfactory for cotton manufacturing.

The building is two stories high, 50 feet wide and 180 feet long. The first floor is occupied by the carding and spinning and warp-preparation machinery, and the professor's office. The second floor is occupied by the weaving and cloth-finishing machinery and by the designing and class-rooms, and the offices of the instructors in weaving.

The building is heated throughout by a Webster vacuum system of steam heat, and a complete sprinkling system for fire protection has been installed. The plumbing in the building is perfectly sanitary and typical of the best cotton mill practice.

HOSPITAL.

The Hospital was erected in 1916. It is two stories and basement high, 116 feet long by 82 feet wide where its dimensions are greatest. The construction is fireproof except for the doors and windows of the wards; openings into the stair tower and elevator shaft are guarded by approved metal doors and windows.

The administration department includes a waiting room, two examining rooms, a record room, a locker room, a dispensary, a laboratory, an operating suite (surgeons' and nurses' "scrubups," sterilizing and anesthetizing and operating rooms), blanket warmers, an X-ray room, a library and store rooms. There is an employes' dining room, a complete kitchen with supply rooms and refrigeration, and diet kitchens with dumb waiter service, steam tables and electric ranges for each floor. There are also living quarters for the staff and attendants.

The mechanical equipment is the best that could be procured. All patients are bathed under showers; those who are too weak to bathe themselves being put under the showers on special wheeled stretchers, and bathed by the attendants.

The College Hospital is the first hospital building in the world to be equipped with showers throughout. There are nineteen, all provided with anti-scalding devices, those for patients being automatically regulated to discharge water of a constant pressure. There is but one permanently installed tub.

CIVIL ENGINEERING BUILDING.

This building, erected in 1909, and used to house the departments of Civil Engineering and Physics, contains eight lecture rooms, five laboratories, five drawing rooms, and several offices and storerooms.

The building is 125 feet wide and 73 feet deep; it has a basement and three stories, is heated by steam and is fireproof.

ELECTRICAL ENGINEERING BUILDING.

This building, erected in 1912, and used to house the departments of Electrical Engineering and Mechanical Engineering, contains thirteen lecture rooms, four laboratories, two drawing rooms, and several offices and storerooms.

It has a basement and three stories; is 125 feet wide by 103 feet deep; is heated by hot water, and is fireproof.

EXPERIMENT STATION BUILDING.

This building, erected in 1909, contains offices, laboratories and storerooms for the officers of the Experiment Station.

The building is 115 feet wide and 61 feet deep; it has a basement and two stories, is heated by steam, and is fireproof.

An additional building for the Experiment Station is in course of erection.

STOCK JUDGING PAVILION.

The Stock Judging Pavilion, built in 1917, is a fireproof building 200 feet long by 100 feet wide, containing a 160-foot by 60-foot display ring surrounded by reinforced concrete circus seats for 1600 spectators. Additional seats of the same character can be erected in the four corners and will provide 240 more sittings. The roof is of cement tile, supported by steel trusses which arc earried on steel columns placed back of the seating sections between them and the wall aisles, thus providing unobstructed view for the entire audience.

The space underneath the seating sections is completely utilized. There are three class rooms with attached offices, waiting rooms, locker and toilet rooms, a washing room, a killing room with refrigeration, quarters for the custodian and ten box stalls for show stock.

DAIRY BARN.

The dairy barn, built in 1916, is a one-story hollow tile building, situated west of the railroad tracks on the principal axis of the campus. It is 200 feet long by 34 feet wide, with a wing in rear 34 feet by 33 feet. The main part is a single room unobstructed by posts, and is used for milking only. There are stalls for 98 cows, which stand in rows back to back. A trolley carrier, suspended from the roof and running the length of the building, is used for handling the milk, which is taken through a screened passage-way to a separate building of the same type of construction at the south end, where it is cooled, separated and prepared for use, and where all untensils are sterilized after each milking.

The floor of the milking room is of concrete and is washed out with a hose twice daily. All doors and windows and the openings into the ventilator running the length of the roof are screened. Conditions are ideal for the production of certified milk.

The wing in the rear contains offices, showers, supply and feed rooms.

SERUM LABORATORY.

The serum laboratory, built in 1917, is a one-tory fireproof building 100 feet long with an average width of 32 feet. It is arranged for the manufacture of hog cholera serum. It contains observation pens, preparation rooms, killing, hyper-immunizing and bleeding rooms, defibernating rooms, laboratories, storage and packing rooms, offices and toilets.

Dormitories.

GATHRIGHT HALL.

This building was erected in 1876, and is named in honor of Thomas L. Gathright, the first President of the College. It is being used temporarily for offices for the Extension Service, and for other purposes.

PFEUFFER HALL.

This is a dormitory, erected in 1887, and contains twenty-five rooms. It is named in honor of George Pfeuffer, a former President of the Board of Directors.

AUSTIN HALL.

This is a dormitory, erected in 1888, and contains twenty-five rooms. It is named in honor of Stephen F. Austin.

ROSS HALL.

This is a dormitory, erected in 1892, three stories high, with forty-one rooms. It is named in honor of former President L. S. Ross.

FOSTER HALL.

This building was erected in 1899, and is named in honor of former President L. L. Foster. It is a dormitory and consists of three separate parts; the central part is four stories high and contains nineteen rooms; the two ends are three stories high and contain eighteen rooms each.

GOODWIN HALL.

This dormitory was erected in 1908 and named in honor of Hon. G. I. Goodwin. It contains eighty-two rooms and is equipped with a steam heating system and modern toilet facilities.

MILNER HALL.

This building was erected in 1911 and named in honor of former President R. T. Milner. It is a dormitory containing one hundred and two rooms. The building is four stories high; there are no connecting stairways betwen the several floors, but each story has separate entrances so as to divide the building into four distinct parts, without interfering with the ventilation in any part of the building. Each story has four shower baths and ample toilet facilities. Every room is provided with water, electric light and hot water heat.

The building is constructed of reinforced concrete and brick, and is practically fireproof.

LEGETT HALL.

This building was erected in 1911, and is named in honor of K. K. Legett, a former President of the Board of Directors. It is a dormitory and in every respect a duplicate of Milner Hall.

HARVEY MITCHELL HALL.

This building was erected in 1912, and is named in honor of a former citizen of Bryan who was largely instrumental in having the College located in Brazos county.

It is a dormitory, having a basement and three stories, and contains eighty-six rooms, each one having an outside exposure. Each story has shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick, and is practically fireproof.

SEWERAGE SYSTEM.

The College is provided with a system of sewers, to which are connected the various dormitories, the academic building, the agricultural and horticultural hall, the steam plant, the hospital, the mess hall, and the residences. The outfall of the system is three-fourths of a mile from the nearest College building and nine-tenths of a mile from the nearest recitation hall or dormitory.

FARM BUILDINGS.

The farm buildings of the College and Experiment Station are situated to the rear of the academic building, and consist of a farm implement building, a mule barn, a general farm barn, an animal husbandry barn with two silos, each of 200 tons capacity.

GROUNDS AND GARDEN.

The garden, orchard, barnyards and campus are included in the enclosure to the east of the railroad stations. The campus consist of some twenty-five acres of lawn, shrubbery and flowers.

The orchard, vineyard, nursery and garden are located north and east of the academic building.

FARM.

The farm proper comprises about three hundred and fifty acres. The pastures contain in the neighborhood of one thousand acres, and furnish grazing for the College herds.

EQUIPMENT.

AGRICULTURAL ENGINEERING.

The department is well equipped with apparatus for lecture and laboratory experiments. Through the generosity of numerous branch houses and manufacturers the laboratory is equipped with all the modern tilling, seeding, harvesting and fertilizing machinery that is in use on the Texas farm. The equipment includes several different types of feed grinders and crushers, seed cleaning and grading machines, centrifugal and piston pumps, hydraulic rams, farm lighting plants. The farm motors laboratory is equipper with twtnty different types of stationary gas engines, including Gilson, R. & V., and Kreuger Atlas portable engines, seven different types of traction engines, including a Buckeye traction ditching machine, 50 H-P J. I. Case steam traction engine and road grader ,two Hart-Parr kerosene tractors, a Bullock 75 H-P creeping grip tractor, a Holt caterpillar and a 30 H-P H. P. Rumley oil pull, Avery 18-36 tractor, I. H. C. Titan tractor, Twin City 15-30 tractor, Moline, P. & O., B. F. Avery, John Deere, and Spalding deep tilling engine plows, I. H.' C. peanut thresher, Swayne Robinson and John Deere hay presses, Delco and Jupiter farm light plants. The laboratory is also equipped with testing instruments such as traction dynamometers, prony brakes, steam and gas engine indicators, planimeters and speed counters. The Studebaker corporation has donated a sectional model of a 35 H-P automobile chassis complete with electric starter. The irrigation and drainage laboratory is equipped with levels, ranging poles, rods, taps, hand axes, pins, etc.; also with spades and drain cleaners for laying out farm drainage and irrigation systems.

ANIMAL HUSBANDRY.

The Animal Husbandry Department is equipped with the following breeds of livestock: Standard bred, thoroughbred, Morgan, and Percheron breeds of horses; shorthorn, Hereford and Aberdeen-Angus breeds of cattle; Shropshire, Southdown, and Rambouillet breeds of sheep; and Duroc-Jersey, Poland-China, Berkshire, and Tamworth breeds of hogs. These breeds are represented by registered breeding animals in the case of horses, and by both registered breeding animals and market animals—steers, withers, and barrows—in the case of cattle, sheep and hogs, respectively.

On the Animal Hsubandry farm there are four barns, viz., a horse barn, a beef cattle barn, a sheep barn, and a hog barn. The land on which the hogs and sheep are kept is divided into small fields and pastures, thus permitting forage crop and pasturage rotation for these animals.

ARCHITECTURE AND ARCHITECTURAL ENGINEERING.

The department has a fair library of valuable books, several thousand plates in ring books, a lantern and slides, and a number of well chosen casts—to all of which additions constantly are being made. Students of architecture have, of course, access to the equipment of other departments in which they are taking work.

BIOLOGY.

The department in its various branches is thoroughly equipped with apparatus for lecture room and for laboratory use. There are six laboratories—one zoological, three botanical, one bacteriological and one research. All are amply provided with tables and other general apparatus.

For the use of elementary classes, the department is provided with 45 standard 2-power microscopes, with their usual accessories; charts and models of plants and animals; a fairly good collection of prepared specimens, and a herbarium of about 3000 mounted plants. A small green house has lately been acquired. For experimental work and demonstration in the class room, there is an excellent equipment of instruments of precision, largely of French and German make. For the use of more advanced workers there are 10 high power microscopes of the best makes; 3 Leitz binocular dissecting microscopes; Reickert and Minot microtomes; imbedding ovens; a large and a small incubator; two steam sterilizers; analytical balances; and a full equipment of glassware, chemicals, stains and similar materials.

The library contains about 250 books of reference and several thousand separates, bulletins and special papers. The leading journals of botany, zoology, bacteriology and mycology are also available to the student.

CHEMISTRY AND CHEMICAL ENGINEERING.

The department has the usual laboratory facilities, including a vacuum system for rapid filtration, a compressed-air system for use with blast lamps and a ventilating system. The laboratories are supplied with hydrant, cistern and distilled water. Each student is assigned to a lock-desk containing the necessary equipment. The large lecture room, with raised seats, has a seating capacity of one hundred and thirty. The museum occupies a large, well lighted room.

There is a separate room for technical analysis and one for advanced industrial chemistry. The latter is not yet fully equipped. The former is provided with vacuum and compressed air systems, colorimeters, calorimeters, refractometers, Lovibond tintometer, combustion furnaces, gas burettes and other special apparatus used in technical analysis. The laboratory has the usual equipment for work in physical chemistry.

The department has a good reference library.

CIVIL ENGINEERING.

The department occupies a portion of the Civil Engineering Building and has five recitation rooms, two drafting rooms, library room, offices, and a good roads exhibit room. In the basement, the department has an instrument room, a general testing room, a hydraulic and road materials testing laboratory, a cement laboratory, and store room.

For the field work, the equipment consists of a well assorted lot of transits and engineers' levels for general work, also for more precise work in city surveying and leveling and for simple triangulation. Also surveyors' compasses, terracing levels, plane tables, aneroid barometers, range poles, rods, chains, chain tapes, metallic tapes, surveyors' pins, axes, etc. For the drafting room and other office work there are drawing tables, reckoning machines, two universal drafting machines, planimeters, slide rules, calculating instruments, protractors for general and special use, and a sufficient supply of T squares, etc.

In the general testing laboratory there is one machine of 100,000, one of 50,000 and one of 20,000 pounds capacity, a 50,000 inch-pounds torsion machine and a rattler for testing paving brick. With the exception of the 20,000-pound machine these are all power-driven.

The hydraulic laboratory contains weirs, pressure gauges, hook gauges, water meters, measuring tanks, impulse wheels, hydraulic ram, centrifugal pumps, pitot tubes, current meters, nozzles, and other apparatus for hydraulic measurements. The centrifugal pumps are connected to a pressure tank in order that they may be forced to pump against various heads. The road materials testing laboratory contains sieves for examining gravel and machines for testing the hardness, working qualities, cementing values, etc., of materials suitable for road building.

In the cement laboratory are moulds for shaping briquettes for tension tests, moulds for compression tests, cement testing machines, sieves for testing the fineness of cement and said, Vicat and Gillmore's needles for testing time of setting, damp closet, balances, pans and other appliances used in testing the qualities of cements.

The road materials testing laboratory is completely equipped with the most modern machines for testing non-bituminous road materials. This equipment includes a diamond core drill, diamond saw, grinding lap, Dorry hardness machine, Page impact machine for toughness test, Deval abrasion machine, ball mill, cementing-valve briquette-forming machine, cementing-valve impact testing machine, brick rattler, stone and sand sieves, sieve agitator, balances, and other miscellaneous equipment.

A road exhibit room is also maintained for the benefit of students and visitors. In this room are shown models of road sections and surfaces made of various materials available in Texas. Samples of gravel, rock, asphalt, and road soils, together with photographs, charts and maps of road work in the State complete the exhibit.

The department library and reading room contains engineering books, periodicals, blue prints, photographs, etc., and is kept constantly open for the use of students during the session.

DAIRY HUSBANDRY.

The creamery and laboratory of this Department occupy the entire south end of the ground floor of the Agricultural Building.

The creamery equipment comprises all necessary machinery for operating a regular commercial creamery, and includes ammonia compressor for providing artificial refrigeration, power churns, ripening and pasteurizing vats, starter cans, and ice cream freezer.

The laboratory includes such equipment as glassware, Babcock testers, centrifuges, and separators.

The farm consists of a complete dairy farm, the operations of which are devoted to the growing of feed crops for the dairy herd, and includes 593 acres of land, of which 225 are under cultivation, the reminder being devoted to pasturage.

All modern machinery is used by this Department, including breaking plows, cultivators, gasoline tractors, and harvesting machinery.

The herd consists of 135 animals, including cows, calves, and bulls, of which there are 37 pure-bred Jerseys, 22 pure-bred Holsteins, and 7 pure-bred Ayrshires. The milking herd usually includes about 70 cows, which are housed in a modern dairy barn constructed of tile and concrete and furnished throughout with modern barn equipment.

DRAWING.

The department is located on the fourth floor of the Academic Building, occupies for large drawing rooms, offices, etc., all of which are especially well ventilated, heated and lighted.

The department is fully equipped with necessary furniture, models, plaster casts, life-size statues, etc.

For illustrative purposes there is in use in the department all modern apparatus for the draftsman, such as electric blue printing machine, Universay drafting machine, pantograph, ellipsograph, etc.

A reference library of the best works on drafting, illustrating, etc., is kept in the department for the convenience and use of students.

ELECTRICAL ENGINEERING.

The electrical engineering laboratories comprise a storage battery room, two adjoining machinery laboratories, a measurements laboratory, a standardizing room, a photometric laboratory, a telephone laboratory, an instrument room, a workshop and storage rooms.

The electrical laboratories are supplied with 2300 volt, three-phase, 60-cycle power from the College power station. Alternating current at 110 and 220 volts is obtained through transformers. Direct current is supplied by two motor-generator sets located in the machinery laboratory. The smaller set consists of a 2300-volt, 50-horse power induction motor direct connected to a 35 kw., 125-volt, compound wound direct current generator. The largest set consists of a 2300-volt, 100-horse power synchronous motor direct connected to two 35 kw., 250-volt, Dobrowolsky, three-wire, direct current generators, so arranged that they may be operated independently or connected in series for obtaining 500 volts. A 3-panel switchboard controls the above equipment and the feeders to the 6-panel switchboard used for the distribution of power within the machinery laboratories and to the switchboards located in the other laboratories. Throughout all laboratories the distribution of power is controlled by a plug-and-socket system, thus securing absolute flexibility.

The storage battery room contains a 60-cell lead storage battery, and a 110-cell Edison storage battery, with a mercury arc rectifier for charging. The batteries are connected through suitable control to the main distributing board.

The equipment of the machinery laboratories is as follows: Two Westinghouse 323-A street car motors mounted on a single shaft with prony brake attachment and equipped with both a hand controller and a master controller operating an electro-pneumatic system; one 250-volt and one 500-volt direct current motor; one 5-horse power, 110-volt, direct current series motor with interpoles; one 1½ horse power shunt generator; three 6 kw. compound wound machines; three 4 kw. compound wound machines; one 5 kw. direct current machine with four slip rings; two 5 kw. compound wound direct current generators with interpoles; one 7½-horse power compound wound motor with interpoles; one 7½-horse power Reliance variable speed motor; one 10 kva three-phase generator with six slip rings; one 20 kva rotary converter with six rings; one 8 kva converter; one 10 kva three-phase generator driven by a set of two 10-horse power, three-phase induction motors, arranged for cascade operation; one motor generator set consisting of a direct current motor and a 3 kva alternator with six rings for single phase, two or three-phase; one 2-horse power Century single-phase motor.

The electrical measurements laboratory has a full equipment of the apparatus needed for the study of the fundamentals of electrical measurements. The equipment includes the following: various types of wheatstone bridges; a Kelvin double bridge; a Cary-Foster bridge; magnetometers, dynamometers; portable, semi-portable and wall galvanometers; astatic galvanometers; universal tangent galvanometer; calorimeters; sechometer; influence machine; electro-static apparatus; spark coils; apparatus for testing magnetic qualities of iron and steel; standard resistances; standard cells; physical balances; universal shunts; resistance boxes; variable inductances and capacities; portable storage batteries, and various minor equipment.

The standardizing room is equipped with a Leeds and Northup potentiometer and its accessories; Weston standard laboratory voltmeter, and milli-voltmeter with shunts; a Kelvin balance; Westinghouse precision ammeter, voltmeter, and wattmeter; and standard resistances and standard cells. In this room there are also a three-vibrator oscillagraph with photographic attachment, and a motor generato set consisting of a direct current motor direct connected to a set of four alternators giving a fundamental wave and the third, fifth and seventh harmonies, so arranged that any desired phase relation may be obtained between each of the harmonies and the fundamental.

The photometric laboratory has two dark rooms for photometric work proper. The equipment includes a station photometer; an illumination photometer; a Sharp-Miller photometer; a Flicker photometer; an integrating photometer consisting of a Ulbricht sphere two meters in diameter, with accessories, especially adapted for arc light photometry; rotating apparatus; a number of incandescent lamp candle power standards; and a collection of various arc lamps, and a number of units representing various indirect and semi-indirect lighting systems. There is also a room for the demonstration and comparison of various light sources and systems.

The telephone laboratory is equipped with a switchboard for central energy operation, a switchboard for magneto operation, and a Strowger automatic switchboard with complete equipment for operation. There are also numerous telephones and a large collection of transmitters, receivers, induction coils, generators, bells, jacks, drops, keys, relays, retardation coils, condensers, repeating coils, lamps, etc., obtained from the Automatic Electric Co., Kellogg Co., Western Electric Co., and other manufacturers. The Bryan Telephone Company operate a complete switchboard, which is used to give local and long distance service from various stations on the campus. This exchange is available to the students in electrical engineering for test. In connection with this laboratory, the department maintains a complete wireless telegraph station of sufficient capacity to reach a number of commercial plants in the State. This equipment is available for study both from an engineering and an operating standpoint.

Through the generosity of the Otis Elevator Company, a complete motor-driven elevator winding-engine equipment of the most modern type, complete with all automatic switches, regulators, controllers, etc., has been donated and installed in the laboratory for test and demonstration purposes.

The department also has a number of frames of dynamos and motors and cores of transformers that are used by the students in learning to wind and repair these machines.

The equipment for the students in electrical engineering is augmented by the fact that the direct connected generators in the powerhouse, their exciters and measuring instruments, and the motors used to operate the Textile School, machine shop and other laboratories are available for tests as practical operating plants after the students have performed the required experiments on the machines located in the laboratory.

Students are urged to read the literature pertaining to their work, and for this purpose the department library is available. A reading table is maintained, on which are kept the current copies of a number of technical magazines. The technical books in the general library are also available to the students.

ENTOMOLOGY.

The Department of Entomology maintains two laboratories, one of which is equipped with dissecting and compound microscopes, and the other with compound microscopes. In addition, the Department maintains an insecticide laboratory equipped with the more important insecticides and spray machines, powder guns, etc.

The Department has several insect models illustrating the anatomy of the more common insects, together with a series of charts illustrating the life histories of insects. This equipment is supplemented by a baloptican and several hundred lantern slides illustrating the anatomy and life history of the more important insects.

The equipment for the work in apiculture consists of a wax press, honey extractors and the various types of beehives.

A library is maintained which comprises two hundred and eighty volumes of technical books on Entomology. This library contains full sets of the Transactions of the American Entomological Society, Genera Insectorum, Journal of the New York Entomological Society, entomological News, The Canadian Entomologist, and Psyche.

In addition a reading table is maintained on which are kept the recent publications on economic entomology and apiculture.

HORTICULTURE.

The class-room work in horticulture is considerably strengthened by practical exercises in orchards, gardens, and laboratory.

There are now growing on the horticultural grounds orchards containing the standard varieties of peaches, pears, plums, pecans, persimmons, grapes, figs, blackberries, and dewberries.

In addition to the commercial gardens where vegetables are grown for use at the Mess Hall, there is a plat of ground that has been set aside on which a great variety of vegetables are grown under the direct supervision of the student.

There is now being planted, in cooperation with the American Rose Society, a rose garden, which, when completed, will contain about eight hundred varieties. There is also to be found on the horticultural grounds a rather complete collection of ornamentals.

The Horticultural Department has a very complete line of spraying machinery, in which are to be found several makes of bucket, knapsack, barrel and power sprayers.

The collection of lantern slides owned by the department, which are used for illustrating different subjects, especially those in landscape art, is growing rapidly, there being now over nine hundred.

MECHANICAL ENGINEERING.

In the carpenter shop are excellent double work benches of special design, equipped with quick-acting vises, and the saws, planes, chisels, etc., ordinarily found in a carpenter's kit, each student having a set of edge tools assigned to him alone. Supplementing these are a number of special tools in the tool room.

The wood turning equipment consists of a number of smaller lathes for the ordinary work, and two large pattern-maker's lathes, which admit of wide application. Besides the lathes there are band, jig and circular saws, planer, jointer, and grindstones, power-driven, for the students' use.

A very complete set of hand and bench tools constitute the equipment of the sheet metal workshop. Here the student learns to lay out and construct sheet metal articles of simple design.

The forge room equipment consists of one 250-pound steam hammer, emery wheels, twenty-eight forges, all having power blast and exhaust, and a number of hand forges, the necessary anvils, tongs, and other small tools usually found in the forge equipment.

In the machine shop the equipment is now very satisfactory. It consists of a full line of lathes, grinders, milling machines, automatic machines, etc., so that the student has an opportunity to learn how to operate the ordinary shop tools and machines. The equipment has been recently increased by the addition of a long lathe with extra size hollow spindle for work on shafting. Another line of the lathes is a most approved type of motor-driven, geared-head precision machine, and is typical of the best of its kind. The automatic machine is one of the most highly specialized machines for the rapid production of duplicate small parts, and shows the student how such parts can be most cheaply made when the number needed warrants the employment of such means. The tool room contains a large assortment of taps, dies, hand drills, etc., and of drills, reamers, chucks, and other machine accessories, as well as the small tools for laying out work and accurately and properly measuring the same; calipers, micrometers, steel scales, punches, surface plates, etc. Electric portable drills and gunder are also included in the equipment.

The engineering laboratory contains steam engines, gasoline engines, steam turbines, steam and power pumps, fans, water motors, a hot-air engine, condensers, air pump, injectors and a full line of indicators, gauges, pyrometers, thermometers, tachometers, speed indicators, weirs, pitot tubes, prony brakes, platform scales, etc., for conducting tests as outlined in course 403. A register-indicator-record venturi-meter has been installed for use in connection with boiler feed measurement.

In addition, the laboratory has the use of all apparatus of the power plant, consisting of compound engines, Corliss and pumping engines of several different kinds; also the boilers of well-known makes and different types. The testing of these constitutes part of the course in mechanical engineering. The equipment of the steam plant adds larger engines, condensers, air compressor, air lift pump, etc.

For the class-room instruction there are numerous full-size wooden and metal models of different kinds of engines, also sections of actual air-brake equipment and other appliances and fittings for railway and power plant equipment.

Besides the above mentioned equipment might be mentioned the fact that manufacturers have in some instances deposited or donated for the use of the department a number of standard appliances, which prove valuable to the student.

PHYSICS.

The Department of Physics occupies sixteen rooms in the Civil Engineering Building, including three large class-rooms with facilities for giving demonstrated lectures, four well equipped laboratories, four offices, shop, and storerooms. These are supplied with alternating and direct current, storage battery, water, gas, and electric lights. The equipment is sufficient for a great variety of demonstration and laboratory work.

Mechanics of Solids, Liquid, and Gases: Apparatus for determining moment of inertia, centrifugal force, acceleration, mechanical and electrical equivalent of heat, Young's Modulus, etc.; micrometer and vernier calipers, rotators, U. S. Standard Measures, air pumps, hydraulic press, cathetometer, chronograph, balances, and many simple and compound machines.

Heat: Conductometers, thermopiles, expansion apparatus, various types of thermometers, and numerous calorimetric outfits.

Light: Polariscope, spectrometer, vernier microscope, Nicol's prisms, camera, projection lantern, optical bench, Hartl discs, heliostat, gratings, interferometer, and a great variety of lenses and mirrors.

Meteorological Instruments: Standard and Maximum-minimum thermometers, Fortin and aneroid barometers, barograph, thermograph, hygrometer, anemometer, etc.

Sound: Sonometers, tuning forks, organ pipes, and wave motion apparatus.

Electrostatics: A very large static machine and accessories.

Current Electricity: Various types of batteries, rheostats, bridges, galvanometers, induction coils, telephone and telegraph fixtures, mercury arc and electrolytic rectifiers; ammeters, voltmeters, and motors for both alternating and direct current; and complete X-ray outfit.

The department has a well chosen assortment of general and special accessories for use with the above apparatus.

The workshop is supplied with motor-driven planer, rip saw, and drill press; soldering outfit, stock materials, and the usual metal and woodworking tools. In the shop all repairs and improvements are made and the specially devised apparatus, requiring continual test, is constructed. Many of the most useful pieces of apparatus have been constructed in the shop. Economy in time and money is thus effected.

The department library contains several hundred volumes treating of pure physics and kindred subjects.

TEXTILE ENGINEERING.

For yarn manufacture there is ample equipment necessary to produce carded or combed yarns, and with it machines for making chain or slashed warps of either single or double yarns.

In the weaving room there are ten hand looms for the weaving of short fancy patterns. There are fourteen Northrop looms, which are entirely automatic and two plain looms for ordinary plain goods. There are two ordinary dobby looms, with box motion to insert four colors for filling; one dobby loom for weaving terry towels; one dress goods loom, with dobby and boxes for making a seven-colored pattern; one loom for weaving narrow Jacquard dress goods, and one with Jacquard loom for weaving table covers.

The finishing machinery is for ordinary ducks, sheetings or drills, and consists of an inspecting machine, railway sewing and rolling machine, a brushing and calendering machine, and a cloth-folding machine.

ADMISSION.

Requests for entrance blanks, and all communications in regard to admission should be addressed to

THE REGISTRAR,

Agricultural and Mechanical College of Texas,
College Station, Texas.

ADMISSION TO FOUR-YEAR COURSES.

GENERAL REQUIREMENTS.

Age, Health, Character.—The applicant for admission must be at least sixteen years old and physically able to perform the duties of a cadet. He must be free from contagious or infectious disease. If he comes from another college, he must present a certificate of honorable dismissal.

Vaccination.—The applicant for admission must present a certificate signed by a physician, in one of the forms given below:

1. ...., Texas, ...191....

This is to certify that.........................has had smallpox.

(Signed) ....M. D.

2. ...., Texas, ...191....

This is to certify that.........................has been successfully vaccinated at two different times, the dates being.............

....

(Signed) ....M. D.

3. ...., Texas, ...191....

This is to certify that.........................has been successfully vaccinated within the last five years.

(Signed) ....M. D.

4. ...., Texas, ...191....

This is to certify that I have today vaccinated.................

....

(Signed) ....M. D.

SCHOLARSHIP REQUIREMENTS.

In order to meet the scholarship requirements, the candidate must be a graduate of an affiliated school and must present fourteen entrance units for full admission, or twelve units for conditional admission. The definition of a "unit" follows:

Definition of a Unit.—"A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work.

This statement is designed to afford a standard of measurement for

the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but, under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute hours, or their equivalent. Schools organized on any other than a four-year basis can, nevertheless, estimate their work in terms of this unit. A four years' secondary school curriculum should be regarded as presenting not more than sixteen units of work."

A four-year course in English in a secondary school will ordinarily be counted as three units.

For description of subjects accepted as entrance units, see Appendix B.

The following statements show in detail the requirements for admission to the Freshman class and to the several short Courses; and the ways in which the required entrance units may be secured.

ADMISSION TO THE FRESHMAN CLASS.

Full Admission.—For full admission to the Freshman Class the applicant must present fourteen units, of which the five and one-half units in list A, below, are prescribed for all applicants. The remaining eight and one-half units must be chosen from list B.

Conditional Admission.—The applicant who presents the five and one-half units in list A and enough elective units from list B to make a total of twelve units will be admitted conditionally. Students admitted conditionally must, within two years, make up two units by examination or by extra work in the College.

LIST A. PRESCRIBED UNITS.

Algebra through quadratics	1½ units
Plane Geometry	1 unit
English	3 units
Total	5½ units

LIST B. ELECTIVE UNITS.

- Foreign Languages:
  - French, 2.
  - German, 2.
  - Latin, 2, 3, or 4.
  - Spanish, 2.
- History and Civics:
  - American History, ½ or 1.
  - Ancient History, 1.
  - Medieval and Modern History, 1
  - Civics, ½.
- Mathematics:
  - Solid Geometry, ½.
  - Trigonometry, ½.
- Science:
  - Botany, ½ or 1.
  - Chemistry, 1.
  - Physics, 1.
  - Physiography, ½.
  - Physiology, ½.
- Vocational Subjects:
  - Agriculture, 1, 2, 3, or 4.
  - Bookkeeping, ½.
  - Drawing, ½ or 1.
  - Manual Training, ½ or 1.
  - Stenography, ½.
  - Typewriting, ½.

Special Requirements.—1. In the School of Engineering, students not presenting Solid Geometry for entrance will be required to take that subject as an extra study in the first term of the Freshman year. Special classes will be formed for this purpose.

2. Students admitted conditionally and not presenting Physics for entrance will be required to take an elementary course in Physics as an extra study during the Freshman year.

3. Freshmen who are required to take an extra study may be required to postpone one of the regular studies of the Freshman year.

METHODS OF ADMISSION.

The required entrance units may be secured:

(A) By certificate of graduation from an affiliated school.

(B) By examination.

(A) ADMISSION BY CERTIFICATE.

Admission to the Freshman Class by certificate will be granted to graduates of Texas High Schools rated as A1 by the State Department of Education, to graduates of affiliated private schools, and to graduates of schools of like standing in other States. Such graduates will be admitted without examination at the opening of the first term on credentials, certifying to their age, character, scholarship and graduation, provided the subjects certified cover the entrance requirements. This certificate must give in detail, concerning each subject which the applicant has studied in the school, the length of time in weeks, the number of recitations per week, and the grade or mark indicating his proficiency. A blank for this certificate may be had upon application to the Registrar.

In the matter of admission to the Freshman Class by certificate, no credit will be given for work done in a secondary school unless the applicant is a graduate of the school.

It is highly important that the applicant send his certificate, properly *filled out, to the Registrar in advance. If this cannot be done, he should bring it with him at the opening of the session.*

(B) ADMISSION BY EXAMINATION.

Any or all scholarship requirements may be met by passing the entrance examinations. The applicant must, in advance, send or hand to the Registrar a list of the subjects in which he wishes to be examined. Entrance examinations for 1917-18 will be held September 19, 20, 1917, according to the following schedule:

Hour.	*September 19*	*September 20*
8-10	Algebra, Agriculture.	Geometry, Trigonometry, Physiography.
10-12	English, Botany.	Physics, Bookkeeping.
1- 3	History, Physiology.	Chemistry, Typewriting, Stenography.
3- 5	Civics, Manual Training.	Foreign Languages, Drawing.

ADMISSION WITH ADVANCED STANDING.

Admission with advanced standing may be secured by examination or by transfer of credits from a college of approved standing. The applicant for advanced standing by transfer must present a certificate of preparatory work covering the entrance requirements of this College, of the work done in the institution from which he comes, and of honorable discharge.

It is important that this certificate be sent in advance.

Credits given by transfer are provisional and may be canceled at any time if the student's work in this College is unsatisfactory.

ADMISSION OF SPECIAL STUDENTS.

Young men over twenty-one years of age, who cannot satisfy all the requirements for admission and are not candidates for a degree, will be permitted to enter the College upon submitting satisfactory evidence that they are prepared to profit by the studies they desire to take. This evidence must be submitted on the official entrance blank and mailed in advance to the Registrar. In order to be admitted to the work of any department, a special student must have the consent of the head of the department; and his course of study, as a whole, must be submitted to the Dean of the College for approval. Special students are required to take Military Science, theory, one hour a week throughout their first and second years; and to take the drill required of regular students.

In special cases the Dean may admit as special students young men between eighteen and twenty-one years of age.

A special student, who may desire to become a candidate for graduation, must satisfy the entrance requirements and obtain the consent of the Dean.

ADMISSION TO TWO-YEAR COURSES.

Health, Character, Vaccination.—For admission to the Two-Year Courses, the requirements in regard to health, character and vaccination are the same as for admission to Four-Year Courses.

Age.—The candidate must be at least eighteen years old.

Scholarship.—The candidate must present a satisfactory certificate as to his proficiency in English grammar and composition, and in Algebra to simultaneous equations of the first degree; or he must pass entrance examinations in those subjects.

ADVISERS FOR FIRST-YEAR STUDENTS.

Each student on entering College will be assigned to a member of the teaching staff, who will act as his adviser and give him helpful counsel in matters pertaining to his work or to any feature of his college life.

REGISTRATION.

Upon arrival at the College, young men intending to enter will report at once to the Commandant's office for full information in regard to registration.

SESSION.

The session begins on the third Wednesday in September, and extends through thirty-six weeks.

Wednesday and Thursday, September 19 and 20, will be devoted to the registration of students. Recitations will begin Friday, September 21.

REGISTRATION FEE.

Every student is required to register when he first enters the College and thereafter at the beginning of each term.

Upon registering for the first time he is charged a registration fee of three dollars. He pays this fee only once unless his connection with the College should later be severed; in that case he must pay the registration fee again in order to ré-enter.

LATE REGISTRATION.

All students, except those registering for the first time, who do not complete their registration on the days set for that purpose, will be charged a fee of three dollars for late registration.

In the case of irregular and special students, registration is not complete until their assignment cards are returned, properly signed, to the Registrar.

EXPENSES FOR THE SESSION.

The fixed charges are:

Trust fund, payable on entrance	$ 5 00	
Incidental fee, payable on entrance	5 00	
Medical fee, payable on entrance	8 00	
Maintenance, First Term, payable on entrance	85 00	
		$103 00
Maintenance, Second Term, payable January 26		85 00
		$188 00

Other necessary expenses are:

Uniform, payable on entrance, about	$30 00	
Books, from $15 to	20 00	
		$ 50 00
Total		$238 00
For Freshmen in the engineering courses, drawing instruments, about		$15 00

The student will need at entrance at least $165.

Payment should be made by bank exchange, money order, or in cash. Personal checks will not be accepted.

The trust fund is to pay for property damaged or destroyed, and will be returned to the parent if there is no charge of this kind against the student, or if he is not otherwise indebted to the College. If charges amounting to fifty per cent of the trust fund deposit are made against a student during the session, he will be required to make an additional deposit covering the total charges made against him.

The incidental fee is used for sundry incidental expenses, such as printed forms, examination books, etc.

The medical fee covers the professional services of the College Surgeon and of the hospital staff.

Incidental, medical, and registration fees will in no case be refunded.

Maintenance includes board, fuel, washing, light, room rent, single bedsteads, mattresses, tables, washstands, chairs.

Each student is required to keep on hand a supply of bed clothing for single beds, towels, etc. For winter he should provide himself with an overcoat and a mackintosh.

Students are required to take their meals at the Mess Hall.

Payment for each term must be made in advance. A student entering during a term will be charged maintenance for the remainder of that term only.

A student once entering for a term, and having paid for that term, or the balance of it, forfeits all claim to said payment in case of voluntary withdrawal from the College before the expiration of said term, except in case of sickness disqualifying him for the discharge of his duties for the rest of the term. When such sickness takes place at the College, it must be attested by the College Surgeon before the student can receive the balance of his maintenance fund.

The expenses of a graduate student are $8.00 for medical fee, with charge for maintenance as above.

Day students pay $18, to cover trust fund, incidental fee, and medical fee as above.

UNIFORM.

Every cadet must keep on hand in cood condition: 1 regulation blouse, 2 pairs regulation gray trousers, 2 pairs regulation white trousers, 1 regulation cap, 1 regulation hat, 6 regulation shirts, 2 regulation white shirts, 6 standing white collars, 6 turned down white collars, 1 pair black shoes, 4 pairs white gloves, 1 regulation tie, 1 regulation belt, 1 working suit, 1 pair regulation leggins, 1 pair regulation olive drab cotton breeches, 1 set collar ornaments; and an ample supply of underwear.

In addition, each student must have, for shop and field practice, a working suit of drilling, which costs from $1.50 to $2.50.

The blouses, trousers, caps and hats are made by contract, and students are required to purchase them from the contractors, in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons, and may secure the best material for the lowest price. All parts of the equipment are carefully inspected by the Commandant of Cadets, in order that good fits and satisfactory materials may be secured.

By means of the contract system not only is there a saving effected, but there is also furnished a guarantee that the material will be of the requisite pattern and quality. For the efficient enforcement of the arrangements entered into, the College authorities require that each student make his purchases through the machinery provided at the College, and that a deposit sufficient to cover the purchase price of the equipment be placed in the hands of the Business Manager when the cadet matriculates. No suit will be ordered until such deposit has been made.

It should be distinctly realized that this clothing is not an additional expense, but that it is the cheapest clothing that cadets can wear. It is neat in appearance, and is serviceable and durable.

The other regulation articles may be purchased at the exchange store mentioned below.

CADET EXCHANGE--BOOKS AND OTHER SUPPLIES.

The College runs an exchange store for the purpose of supplying necessary articles to students at the lowest possible cost. The store carries in stock books, stationery, drawing instruments, regulation articles of the uniform, toilet articles, etc. These goods are sold at prices just sufficient to cover cost and operating expenses.

STUDENT LABOR.

The Legislature provides a fund by which a limited number of industrious young men may defray a part of their expenses by working for the College at such times as their regular duties will permit.

The rate of pay is made to depend upon the character of the work, and the manner in which it is performed. A student should not count upon earning more than $40 a session.

COURSES OF STUDY.

There are eleven regular Courses, extending through four years; ten of them lead to the degree of Bachelor of Science, the particular Course pursued being specified in the diploma; the Course in Veterinary Medicine leads to the degree of Doctor of Veterinary Medicine; and there are graduate Courses and short Courses as shown below.

REGULAR COURSES.

I. Course in Agriculture.
III. Course in Mechanical Engineering.
IV. Course in Civil Engineering.
V. Course in Electrical Engineering.
VI. Course in Textile Engineering.
VII. Course in Architectural Engineering.
VIII. Course in Chemical Engineering.
IX. Course in Architecture.
X. Course in Science.
XI. Course in General Engineering.
XIII. Course in Veterinary Medicine.

GRADUATE COURSES.

(A) A graduate Course in Agriculture, leading to the degree of Master of Science in Agriculture.

(B) Graduate Courses leading to the degrees of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, Textile Engineer.

TWO-YEAR COURSES.

(C) Course in Agriculture.
(F) Course for Electricians.
(G) Course for Power Plant Operators.
(H) Course in Textile Engineering.
(L) Course in Telephony.
(M) Course in Agricultural Engineering.

SHORT WINTER COURSES.

Course in Buttermaking.
Course for Road Supervisors and County Surveyors.
Reading Courses in Highway Engineering.

THE SCHOOL OF AGRICULTURE

FACULTY.

WILLIAM BENNETT BIZZELL, M. A., D. C. L.
President.

E. J. KYLE, M. S. A.,
Dean.

CHARLES PURYEAR, M. A., C. E., LL. D.,
Dean of the College,
Professor of Mathematics.

M. FRANCIS, D. V. M.,
Professor of Veterinary Anatomy.

E. J. KYLE, M. S. A.,
Professor of Horticulture.

C. P. FOUNTAIN, A. M.,
Professor of English.

O. M. BALL, M. A., Ph. D.,
Professor of Biology.

O. F. CHASTAIN,
Professor of History.

J. OSCAR MORGAN, M. S. A., Ph. D.,
Professor of Agronomy.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

M. L. HAYES, A. M.,
Professor of Agricultural Education.

C. B. CAMPBELL, Ph. D.,
Professor of Modern Languages.

J. W. RIDGWAY, M. S.,
Professor of Dairy Husbandry.

R. P. MARSTELLER, D. V. M.,
Professor of Veterinary Medicine and Surgery.

E. C. GEE, B. S.,
Professor of Agricultural Engineering.

J. H. FOSTER, B. S., M. F.,
Professor of Forestry.

O. W. SILVEY, A. M., Ph. D.,
Professor of Physics.

F. B. CLARK, M. A., Ph. D.,
Professor of Economics.

CAPTAIN C. H. MUELLER, Cavalry, U. S. A.,
Professor of Military Science and Tactics.

S. W. BILSING, M. A.,
Acting Professor of Entomology.

W. H. THOMAS, B. Lit.,
Associate Professor of English.

A. T. POTTS, M. S.,
Associate Professor of Horticulture.

J. D. BLACKWELL, B. Pd., B. S. A.,
Associate Professor of Agricultural Education.

S. A. McMILLAN, B. S.,
Associate Professor of Agronomy.

F. W. BELL, B. S. A.,
Associate Professor of Animal Husbandry.

L. B. BURK, B. S. A.,
Associate Professor of Animal Husbandry.

N. M. McGINNIS, B. S.,
Associate Professor of Horticulture.

C. A. WOOD, B. S. A.,
Associate Professor of Agronomy.

F. HENSEL, M. S.,
Associate Professor of Horticulture.

R. D. BRACKETT, A. B.,
Associate Professor of English.

COURSES OF STUDY.

In the School of Agriculture there are offered the following Courses:
Regular four-year Course in Agriculture.
Two-year Course in Agriculture.
Two-year Course in Agricultural Engineering.
Course in Buttermaking.

REGULAR FOUR-YEAR COURSE.

The regular four-year Course has as its main object the preparation of young men for the business of farming, for the pursuit of scientific investigation along some line of agriculture, for becoming county demonstration agents, or extension workers, and for teaching in the high schools and agricultural colleges. It also affords excellent preparation for young men who intend to follow business pursuits. Systematic training is given in the sciences of biology, chemistry, entomology and physics, which are fundamental to the study of scientific agriculture, and in technical subjects, covering the main divisions of agriculture, including agricultural engineering, agronomy, animal husbandry, dairy husbandry and horticulture. In this Course the work of the Freshman and Sophomore years is prescribed. As shown in the curriculum, the work of the Junior and Senior years is arranged so as to provide for a choice by the student of one of eleven groups of studies. This arrangement affords the student a wide range of subjects from which to choose his major work, permitting him to specialize in agricultural education, agricultural engineering, agronomy, animal husbandry, biology, entomology, horticulture, or in landscape art.

As will be noted, certain studies are common to all the groups; and in each group a part of the work is elective; see lists A and B, page 73. The choice of groups is to be made by April 15 of the Sophomore year.

TWO-YEAR COURSE IN AGRICULTURE.

This Course is intended for young men who wish to spend one or two years in preparing to go back to the farm and apply the more important scientific methods of farming which have been worked out in recent years. To this end the Course is made highly practical and technical, and includes in abbreviated form much of the technical work required in the four-year Course. In the first year, the studies are all prescribed; in the second year, they are largely elective. The electives must be chosen under the advice and direction of the Dean of the School of Agriculture. Students who have had approved farm experience will, upon completion of this course, be awarded certificates.

TWO-YEAR COURSE IN AGRICULTURAL ENGINEERING.

Special machinery and equipment are playing an important part in the development of the agricultural interests of the State.

This Course is designed, primarily, to meet the needs of students who have not had the advantage of a high school training and who wish to specialize in the engineering side of agriculture. It will especially fit students for the technical side of the farm implement and equipment business. Students who have an aptitude for mechanics and who are interested in agriculture, will find this Course well suited to their needs.

SHORT COURSE IN BUTTERMAKING.

This is a ten-day practice Course offered by the Dairy Husbandry department in Creamery Buttermaking, including practical instruction in the ripening and pasteurizing of cream and in churning. The fundamentals of creamery arithmetic and creamery bookkeeping are also included in this course. It is offered especially for buttermakers or "helpers," who have had some practical experience in the creamery, and who desire to supplement such experience with study.

The Course will begin the second Monday in January of each year.

For further information in regard to this course, address

PROFESSOR OF DAIRY HUSBANDRY,
College Station, Texas.

THE SCHOOL OF ENGINEERING.

FACULTY.

WILLIAM BENNETT BIZZELL, M. A., D. C. L.,
President.

D. W. SPENCE, C. E.,
Dean.

CHARLES PURYEAR, M. A., C. E., LL. D.,
Dean of the College and Professor of Mathematics.

D. W. SPENCE, C. E.,
Professor of Civil Engineering.

C. P. FOUNTAIN, A. M.,
Professor of English.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

O. F. CHASTAIN,
Professor of History.

J. B. BAGLEY, B. A.,
Professor of Textile Engineering.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

A. MITCHELL, B. C. E.,
Professor of Drawing.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

H. E. SMITH, M. E.,
Professor of Steam Engineering.

C. B. CAMPBELL, Ph. D.,
Professor of Modern Languages.

R. L. MORRISON, M. A.,
Professor of Highway Engineering.

R. ADELSPERGER, B. A., B. S.,
Professor of Architecture.

A. C. LOVE, B. S.,
Professor of Railway Engineering.

O. W. SILVEY, A. M., Ph. D.,
Professor of Physics.

F. B. CLARK, M. A., Ph. D.,
Professor of Economics.

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Associate Professor of English.

J. J. RICHEY, C. E.,
Associate Professor of Civil Engineering.

J. H. CANNON, B. S.,
Associate Professor of Engineering.

B. K. COGHLAN, C. E.,
Associate Professor of Highway Engineering.

O. B. WOOTEN, B. S.,
Associate Professor of Electrical Engineering.

H. B. GORDON, M. S., Ph. D.,
Associate Professor of Chemistry.

C. S. TATUM, B. S.,
Associate Professor of Textile Engineering.

R. D. BRACKETT, A. B.,
Associate Professor of English.

A. B. RAY, M. A.,
Associate Professor of Chemistry.

COURSES OF STUDY.

In the School of Engineering there are offered the following Courses:

REGULAR FOUR-YEAR COURSES.

Course in Architectural Engineering.
Course in Architecture.
Course in Chemical Engineering.
Course in Civil Engineering.
Course in Electrical Engineering.
Course in General Engineering.
Course in Mechanical Engineering.
Course in Textile Engineering.

TWO-YEAR COURSES.

Two-Year Course for Electricians.
Two-Year Course for Power Plant Operators.
Two-Year Course in Textile Engineering.
Two-Year Course in Telephony.

OTHER SHORT COURSES.

Winter Short Course for Road Supervisors and County Surveyors.
Reading Course in Highway Engineering.

COURSES IN ARCHITECTURE AND ARCHITECTURAL ENGINEERING.

"Architecture is essentially a fine art; but it is a fine art which may be expressed on so large a scale that a deep and comprehensive knowledge of engineering science is necessary to make its expression stable."

In the Course in Architecture, stress is laid on the æsthetic side, and in the Course of Architectural Engineering, on the constructive side of the profession.

Architectural practice has so grown in complexity that it is no longer economically feasible, or in the large sense, desirable, to combine the two abilities. In fact, it rarely happens that the aptitude for both is found in the same individual. Personal preference, then, will guide the student choosing architecture as his life-work in determining which phase of the profession to adopt. But, as both phases are more or less inter-related—the designer must have a certain minimum of constructive ability, and the engineer a certain minimum of designing ability,—it is desirable to make the Courses of study alike to a certain point. For this reason the Courses now offered are identical during the Freshman and Sophomore years, and students are thus carried to a point where a choice can be made with discretion.

The Course in Architecture is designed to prepare men to go into "general practice." Great stress is put on design and pleasing presentation in color, wash and line, and on period decoration, sculpture and painting, but a ground-work is laid in the underlying principles of construction, sanitation, lighting, heating, ventilation and the kindred utilities which so frequently go into the modern building.

The Course in Architectural Engineering is designed to prepare men for the more technical and scientific aspect of the profession. The application of constructive principles is broader and more thorough, and the design practice is confined largely to the type of problems construction engineers are called upon to solve.

In both Courses as much prominence as possible is given to cultural subjects in order to fit the student to meet on an equal plane the type of men that will be his natural clients.

Both Courses meet the standard requirements of the Association of American Schools of Architecture.

COURSE IN CHEMICAL ENGINEERING.

This Course is designed to prepare young men for technical work in those industries in which raw materials undergo a chemical change in the process of manufacture. Many fields are open to students trained in applied chemistry, and inquiries are continually being received_asking for men capable of filling important positions in different industries. Some industries important to the present and future development of this State are those dealing with cottonseed products, sugar, leather, petroleum, cement, ceramics and iron and steel. The analytical chemistry given in the Course is sufficient to enable the graduate to engage in the work of a commercial plant or to enter an industrial plant as a control chemist. The control chemist repeatedly analyzes and evaluates the raw material used in the manufacture as well as the intermediate and finished products. It is through such control that industries of this kind have been made scientific. Pure food laws and other legal enactments calculated to protect the people against fraud have, of late years, greatly accentuated the importance of this work. At the same time enough work is given in general engineering practice to enable the graduate who enters the work as a control chemist to come in time to a full understanding and mastery of the industry in which he is engaged.

The fifth year's work, leading to the degree of chemical engineer, is designed to facilitate the transformation of the control chemist into the manager of an industrial plant, capable of adapting chemical processes to varying conditions and improving upon them as occasion demands.

COURSE IN CIVIL ENGINEERING.

The Course in Civil Engineering has for its object the preparation of young men for entrance upon professional practice in the fields of surveying, highway construction and maintenance; municipal engineering, as related to street location, paving, water supply, sewerage, sewage disposal works, street railroads, etc.; railway location, construction and maintenance; construction of levees and other protection works to guard against damage by overflows; irrigation and drainage engineering, the construction of canals and reservoirs, and the installation of pumping plants, filtration works, etc.; the design and construction of bridges, steel buildings, and masonry structures.

A thorough grounding in the underlying principles of engineering is given, together with the application of these principles to as many special lines as time will permit. Attention is given to drafting, to the preparation of contracts, specifications and estimates of cost, and to supervision of engineering work. The Course is divided into four groups: (1) General civil engineering, (2) highway engineering, (3) municipal and sanitary engineering, (4) military engineering.

The Course in general civil engineering is designed for the student who wishes a general knowledge of civil engineering subjects, and also for the student who wishes a general engineering education, but does not expect to follow engineering as a profession but is using this course for training his reasoning powers. Graduates in this group are prepared for positions in any of the general civil engineering subjects.

Graduates in the group in highway engineering are prepared for positions in highway departments of States, counties, road districts and cities, with consulting engineers and contractors engaged in road and street work, and in engineering and sales departments of companies buying machinery and materials for highway work.

The Course in municipal and sanitary engineering is designed for the student who realizes that the rapid development of the State and the possible growth of the smaller towns will create in a very few years a demand for engineers trained along these lines.

The curriculum for the group in military engineering is designed to give the student a training in general civil engineering, and also to prepare him for examination for a commission in the Field Artillery, Cavalry, and Infantry of the Regular Army of the United States. A number of graduates of this institution have obtained commissions in the Army in the past, and this course is particularly adapted to the needs of those who may hereafter wish to do so. A graduate of this Course will be well qualified for a commission as second lieutenant in the United States Army, and should ge well prepared to pass the examination prescribed by the War Department for all candidates from civil life.

In the Division of Highway Engineering the Department of Civil Engineering is meeting a constantly increasing demand along lines of great importance to the State. In addition to conducting classes in road building, and in street paving and improvement, members of the Highway Engineering staff deliver lectures and give advice on highway matters all over the State to as full extent as time and other duties permit. Exhibits for instruction in highway engineering are shown at the leading fairs and on demonstration trains for the purpose of giving as many people as possible an opportunity to become familiar with approved methods in these lines. One or more representatives of the Division of Highway Engineering will be present wherever these exhibits are shown, to explain the modes and to describe present practice in road construction and maintenance.

The fifth year's work, leading to the degree of Civil Engineering (C. E.) offers opportunity for more advanced study in some of the branches of Civil Engineering than can be had within the limit of the four-year Course. Every student who can afford the time and money is urged to follow his four-year Course, when possible, with the more technical work of the fifth year.

COURSE IN ELECTRICAL ENGINEERING.

The Course in Electrical Engineering is designed to give the student a thorough training in the underlying principles of direct and alternating current phenomena and of electric measurements. It provides training in subjects fundamental to the general practice of the engineering profession, in the theory of electricity and in the application of the theory to practical problems in many branches of applied engineering.

By making certain slight modifications in the regular curriculum, the Course may be made to cover all the subjects required for examination for a commission as second lieutenant in the Coast Artillery Corps, U. S. Army. The student who expects to take the examination for a commission will be allowed to take the modified curriculum.

The work of the first three years of the course is intended to cover most of the fundamental principles of engineering. This is followed in the Senior year by a more detailed study of the applications of these principles. The applied subjects are taught with two objects, the first and more important of which is to impress more firmly on the student's mind the principles already learned. The second object is to give the student some specific information about some branch of electrical engineering.

The rapidly increasing number of electrical plants and circuits for power transmission, lighting, transportation, telephoning, and telegraphing demands men who are prepared to design, construct and operate them. The studies in the Course outlined have been carefully selected with this demand in view.

A branch of the American Institute of Electrical Engineering has been organized among the students and affords the means of keeping students in touch with the latest development in the electrical field.

COURSE IN GENERAL ENGINEERING.

The Course in General Engineering is designed for those who desire general training along engineering lines rather than special training in any one particular branch of engineering. This Course is commended to young men who contemplate going into business pursuits, especially those in which a general knowledge of engineering subjects is desirable. The work of the Freshman and Sophomore years is prescribed. That of the Junior and Senior years is largely elective; but a stated amount of work must be taken in the Departments of Civil, Electrical and Mechanical Engineering.

COURSE IN MECHANICAL ENGINEERING.

The Course in Mechanical Engineering is designed with a view of giving the student such training as will fit him to design, construct, and erect machinery, power and industrial plants, equipment, etc., and to manage or to operate the same with the greatest economy of labor and materials.

It is not possible to give the student that skill in the shops and that experience in the laboratories which come with long service in practical work, but the aim is to give him the power to understand and apply the underlying principles which are involved in all problems met with in practical engineering.

When it is remembered that there is a steam power plant or other mechanical equipment connected with practically every industrial enterprise it is apparent that the graduates from the Course in Mechanical Engineering should find a large field for their activities in the industrial development of the State. The training at College followed by a few years contact with the practical work should fit one to take charge of the operation or of the management of almost any industrial enterprise whether strictly mechanical engineering or involving other activities as well.

COURSE IN TEXTILE ENGINEERING.

The object of this Course is to prepare young men for entering the field of textile manufacturing. The unprecedented development of the cotton milling industry in the South has brought about an era of prosperity and created a strong demand for educated young men in this industry. The State of Texas offers excellent advantages for the manufacture of cotton goods in its vast supply of raw material, intelligent labor, and excellent climatic conditions, and it is believed that cotton manufacturing will develop as rapidly as skilled and capable managers familiar with local conditions are to be had. The studies outlined have been selected with a view of giving theoretical and practical training in the manufacture of cotton goods as thorough as is possible in the time available.

SUBSTITUTION OF A MODERN LANGUAGE FOR ENGLISH IN ENGINEERING COURSES.

1. In the Courses in Chemical Engineering, Civil Engineering, Electrical Engineering, Textile Engineering, the student may, for satisfactory reasons approved by the Dean of the College, substitute a modern language, French, German or Spanish, for English 211, 212; in that case, he will be required to continue the same modern language in his Junior year, but will not be required to take English 321, 322.

Application must be made by April 15 of the Freshman year.

2. In the Courses in Architecture, Architectural Engineering, General Engineering, Mechanical Engineering, the student may, for satisfactory reasons approved by the Dean of the College, substitute a modern language, French, German or Spanish, for English 311, 312; in that case, he will be required to continue the same modern language in his Senior year.

Application must be made by April 15 of the Sophomore year.

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

The Two-Year Course in Textile Engineering is intended for young men who wish to take up the work of cotton manufacturing and cannot spend more than two years in preparation.

The aim is to prepare young men for responsible positions in a cotton mill after a short term of apprenticeship. Certificates will be given students who complete the work as outlined.

TWO-YEAR COURSE FOR ELECTRICIANS.

The Course for Electricians is as complete in both theoretical and practical training as is possible in two years. It is intended to be a thoroughly practical Course, giving a familiarity with modern electric machines and their underlying principles.

The Course gives ample preparation for many positions in the electrical industry, and has for its object the training of young men for positions in power, lighting and railway plants and telephone service and in other industries using electricity and electrical machines.

The Course is designed particularly for young men who have had some practical experience in electrical work and who wish to add to their theoretical knowledge of electricity and allied subjects in order that they may prepare themselves for promotion to positions of greater responsibility.

TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

The Two-Year Course for Power Plant Operators is a short Course for those men who are unable to take a full four-year Course. Wherever it is possible for him to do so, the student is urged to take the regular four-year Course. The two-year Course is particularly intended for the man who has been at work in a powerhouse and who finds he is handicapped by a lack of theoretical preparation or education, and who finds himself thus prevented from making reasonable advancement. It is assumed that he will enter upon this Course with a very well defined idea of what he needs and with a determination to make the most of his opportunities. While the entrance requirements are made so low as to enable any deserving applicant to enter, any additional preparation or training he may possess will make it possible for him to better take advantage of the opportunities here given him.

The student completing this Course should find ready employment in subordinate positions at the numerous power plants of the State and should rapidly develop to the more responsible operating positions.

TWO-YEAR COURSE IN TELEPHONY.

This Course is intended for the young man who wishes to make a brief theoretical and practical study of the equipment used in the telephone industry. This Course begins with a study of the principles of electricity and magnetism, including such principles of alternating currents as are directly applicable to telephony. The various parts of the telephone are studied, as are distributing frames and switchboards.

A detailed study is made of the entire telephone plant, the principles of its design, and the methods of testing. The student is required to work numerous problems in plant design. Special emphasis is laid on methods of testing telephones and telephone circuits, and the student is given practice in making these tests under conditions as nearly as possible like those encountered in commercial work.

The course of instruction is augmented by occasional lectures from men in the commercial telephone field.

WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY SURVEYORS.

The Department of Civil Engineering will, during the session of 1917-18, offer a short course for public road supervisors, road overseers, county surveyors, and others interested in such work. This Course will cover the most important features of country road construction and maintenance, and will consist of lectures, recitations, and field work. It will be open only to men over twenty-one years of age.

No entrance examinations will be required, and no college credit or certificate of proficiency will be given. Rooms will be charged for at the rate of $1.00 a week to cover cost of light, heat and janitor service. Meals will be furnished at the Mess Hall at 25 cents each, or $4.00 a week.

Persons desiring to take this Course should correspond in advance with the Professor of Highway Engineering.

READING COURSES IN HIGHWAY ENGINEERING.

It is believed that there are many engineers, and other men, interested in highway work who may not find it convenient to attend the regular courses in highway engineering, but who would like to take advantage of the College facilities to do studying along special lines adapted to their particular needs.

To such men the College offers the use of its libraries, files of technical magazines, bulletins, circulars, trade catalogues, road exhibits, laboratory, etc. The members of the Highway Engineering staff may be consulted at any time and will outline courses and put the student in touch with the best sources of information on any subject.

Persons over 21 years of age will be admitted to this Course at any time of the session and may remain as long as they desire. No entrance examinations are required and no college credit is given. There is no charge except for room and board. Rooms may be obtained in the dormitories for $1.00 a week, and meals will be served in the Mess Hall for 25 cents each, or $4.00 a week.

Persons desiring to take this Course should correspond in advance with the Professor of Highway Engineering.

THE SCHOOL OF VETERINARY MEDICINE

FACULTY

WILLIAM BENNETT BIZZELL, M. A., D. C. L.,
President.

M. FRANCIS, D. V. M.,
Dean.

CHARLES PURYEAR, M. A., C. E., LL. D.,
Dean of the College.

M. FRANCIS, D. V. M.,
Professor of Veterinary Anatomy.

C. P. FOUNTAIN, A. M.,
Professor of English.

O. M. BALL, M. A., Ph. D.,
Professor of Biology.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

C. B. CAMPBELL, Ph. D.,
Professor of Modern Languages.

J. W. RIDGWAY, M. S.,
Professor of Dairy Husbandry.

R. P. MARSTELLER, D. V. M.,
Professor of Veterinary Medicine and Surgery.

O. W. SILVEY, A. M., Ph. D.,
Professor of Physics.

CAPTAIN C. H. MUELLER, 11th Cavalry, U. S. A.,
Professor of Military Science and Tactics.

S. W. BILSING, B. S., M. A.,
Acting Professor of Entomology.

W. H. THOMAS, B. Lit.,
Associate Professor of English.

F. W. BELL, B. S. A.,
Associate Professor of Animal Husbandry.

L. B. BURK, B. S. A.,
Associate Professor of Animal Husbandry.

R. C. DUNN, D. V. M.,
Associate Professor of Veterinary Medicine and Surgery.

COURSE IN VETERINARY MEDICINE.

This Course has for its object the systematic training of young men in all matters pertaining to diseases of domestic animals.

The Freshman and Sophomore years are, in large measure, devoted to those physical and biological studies that contribute so much to an understanding of the problems of health and disease. The Junior and Senior years are almost entirely devoted to studies of a technical nature.

Those who expect to engage in ranching, dairying or some other branch of animal industry, will find the Course of great value to them in preventing serious losses from disease or mismanagement of their animals. Those who possess a biological mind will find it an interesting life study, and such men are in great demand in matters of public health or as investigators in Experiment Stations. Those who pursue the course from commercial motives will find its rewards are similar to those of any other form of human endeavor, in that these will always be in proportion to the intelligence and energy displayed by the individual.

When we recall that the value of domestic animals in Texas is about five hundred million dollars, it becomes apparent that men informed on such matters will be of great value to the State.

COURSE IN SCIENCE.

The Course in Science is planned to meet the needs of young men whose interests lie in the field of applied bacteriology, botany, chemistry, entomology, or of zoology. Graduates in this Course should be qualified to enter the service of the State or Federal Department of Agriculture, or of Experiment Stations. This Course also affords excellent preparation for the study of medicine.

The work of the Freshman and Sophomore years is prescribed. The studies of the Junior and Senior years are arranged in five groups, with the view of permitting the student to specialize in any one of the five subjects named above. As will be noted, certain subjects are common to all the groups. The choice of groups is to be made by April 15 of the Sophomore year. This Course is administered by the General Faculty.

GRADUATE COURSES.

Administration.—The regulations concerning graduate studies and all matters relating thereto are administered by the Committee on Graduate Studies.

Advanced Degrees.—The College offers graduate courses leading to advanced degrees as follows: Master of Science (M. S.), Chemical Engineer (Ch. E.), Civil Engineer (C. E.), Electrical Engineer (E. E.), Mechanical Engineer (M. E.), Textile Engineer (T. E.).

Admission.—In order to be admitted to a course of study leading to an advanced degree, the candidate must satisfy the following requirements:

1. He must be a graduate of this College or of some other institution approved by the Faculty.

2. His undergraduate record must be such as to satisfy the Committee that he is qualified by native ability and by training to pursue graduate studies with profit and with credit.

Application should be made in advance to the Chairman of the Committee, and in case the candidate comes from another institution, his application must be accompanied by a complete transcript of his undergraduate record.

Registration.—Graduate students must register at the beginning of each term at the office of the Registrar.

Studies.—The candidate's choice of studies shall be subject to the approval of the heads of the departments in which he proposes to work, and of the Committee.

For the degree of Master of Science in Agriculture, the candidate must choose a major subject and one or two minors, and shall devote to the major the equivalent of two-thirds of his time for one year, and to the minor, or minors, the equivalent of one-third of his time for one year.

Modern Language Requirement.—For the degree of Master of Science in Agriculture, the equivalent of two years undergraduate work in French or German is required.

Residence.—Advanced degrees will not be conferred except after a residence of at least one year at the College. For candidates engaged in teaching or other regular employment, the period of residence will be increased to such extent as the Committee may determine.

Amount of Work.—The amount of work required for an advanced degree is reckoned as the equivalent of the student's full time for one academic year.

Quality of Work.—In order to be allowed to go on with his course a graduate student must give continued satisfaction in his work.

Thesis.—The candidate must submit a thesis, which shall be based upon his work in the department in which he takes his leading subject. Its title must be submitted to the Committee for approval by November 15. In matter and style the thesis must be acceptable to the head of the department in which it is written and to the Committee. It must show that the candidate has the ability to do independent work; and, by correct citation of authorities, must show that he has satisfactory acquaintance with the literature of his field.

The thesis must be typewritten on paper 8½ inches by 11 inches; two weeks before Commencement it must be presented to the Committee in completed form, ready for binding. Before the degree is conferred, a bound copy for the College library must be deposited with the Chairman of the Committee.

Examinations.—The candidate must pass satisfactory examinations upon the work of his course. These examinations may be oral or written, or both, and shall be open to the Committee and to members of the Faculty.

Reports.—Heads of de departments will make reports to the Registrar at the end of each term on all graduate work done in their respective departments; and such other reports on the progress of their graduate students as the Committee may request.

Special Committee.—The instructors under whom a graduate student takes work shall constitute a special committee to direct and advise him concerning his work and to represent him before the Committee on Graduate Studies. The instructor in charge of the leading subject shall be chairman of the special committee in each case.

Graduation.—When a candidate has to the satisfaction of the Committee on Graduate Studies completed the requirements for an advanced degree he will be recommended to the Faculty for his degree.

WORKING FELLOWSHIPS IN THE EXPERIMENT STATION.

A graduate student holding an appointment to a working fellowship in the Agricultural Experiment Station may choose his major subject for the degree of Master of Science in Agriculture under the head of a division in the Experiment Station; his minor subject or subjects must be chosen in one of the departments of instruction in the College. In this case the work of his major subject shall take the form of active participation in research work on some problem under investigation by the Station.

The holder of such a fellowship shall spend at least two years upon his graduate work.

CURRICULA.

THEORY, PRACTICE, TERM-HOUR.

In the curricula shown on the following pages, the time devoted each week to the several subjects is expressed in clock-hours. The hours devoted to "theory" (which includes recitations and lectures) are indicated in the column headed "Th.," the hours devoted to "practice" (which includes work in laboratory, shop, drawing room or field) are indicated in the column headed "Pr."

A "term-hour" is one clock-hour of "theory" or two clock-hours of "practice."

The curricula for the class of 1918 are shown in Appendix A.

Notes.—1. In addition to the work shown in the several curricula, students taking English are required to attend conferences with their instructors.

2. In engineering courses, freshmen are required to attend an engineering assembly once a month; sophomores, juniors and seniors, once a week.

3. The Junior and Senior courses in Military Science, theory, (301, 302 and 401, 402), are required of members of the R. O. T. C.; they are not open to other students. Military drill, two hours a week, is required of all classes.

I.—COURSE IN AGRICULTURE.

FRESHMAN YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Agronomy 101 El. Crop Production	2	2	Animal Husbandry 102 Market Types	0	4
Animal Husbandry 101 Market Types	0	4	Biology 102 Botany	3	2
Biology 101 Botany.	3	2	Chemistry 102 Inorganic	3	2
Chemistry 101 Inorganic	3	2	Dairy Husbandry 102 El. Dairying	2	2
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Physics 101 Principles of Physics	2	2	Physics 102 Principles of Physics	2	2
Military Science 101	1	2	Military Science 102	1	2
	14	14		14	14

SOPHOMORE YEAR.

Animal Husbandry 201 Farm Poultry	2	2	Animal Husbandry 202 Breed Types	2	2
Biology 201 Zoology	2	2	Biology 202 Zoology.	2	2
Chemistry 209 Geology	2	2	Chemistry 206 Organic	3	2
English 201 Literature	3	0	English 202 Literature	3	0
Horticulture 201 Plant Propagation and Orcharding	3	2	Horticulture 202 Vegetable Gardening	2	2
Military Science 201	1	2	Military Science 202	1	2
Veterinary Medicine 201 Anatomy and Physiology	2	2	Veterinary Medicine 202 Non-infectious Diseases	2	2
	15	12		15	12

Required in all Groups.

JUNIOR YEAR.

Agronomy 301 Soils	3	4	Agronomy 302 Farm Crops	4	2
Chemistry 309 Analytical	1	4	Chemistry 304 Agricultural	2	2
English 301 Argumentation	1	0	English 302 Argumentation	1	0
	5	8		7	4

SENIOR YEAR.

Economics 401 Fundamental Principles	3	0	Agronomy 402 Farm Management	3	4
English 401 Public Speaking	1	0	Economics 402 Rural Economics	3	0
			English 402 Public Speaking	1	0
	4	0		7	4

GROUP 1. AGRICULTURAL CHEMISTRY.

JUNIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Chemistry 305 History of Chemistry	1	0	*Agronomy 304 Soil Mapping	1	4
Chemistry 321 Physical Chemistry	2	4	Chemistry 322 Qual. and Quan. Analysis	1	4
Dairy Husbandry 305 Milk Inspection	1	2	Biology 306 General Bacteriology	1	4
*Entomology 301 Systematic	2	2			
	6	8		3	12

*Or one subject from List A, p. 73.

SENIOR YEAR.

Animal Husbandry 401 Animal Nutrition	3	2	Chemical Engineering 406 Microchemical Methods	0	2
Chemistry 421 Advanced Agricultural	2	8	Chemistry 422 Advanced Agricultural	2	8
	5	10		2	10

And one of the following:

Agronomy 401 Plant Breeding	3	2	Agronomy 408 Advanced Soils	2	2
Biology 401 Advanced Bacteriology	2	4	Biology 402 Soil Bacteriology	2	4
One subject from List B, page 73.			One subject from List B, page 73.		

GROUP 2. AGRICULTURAL EDUCATION (a).

(For students not expecting permanent certificates.)

JUNIOR YEAR.

Agricultural Education 301 Educational Psychology	3	0	Agricultural Education 304 High School Problems	3	0
Agricultural Engineering 307 Farm Motors	2	4	Biology 302 Rural Sanitation	2	4
*Entomology 301 Systematic	2	2	*Entomology 302 Economic	2	2

*Or one subject from List A, p. 73.

SENIOR YEAR.

Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 Adm. of H. S. Agriculture	3	0
Animal Husbandry 401 Animal Nutrition	3	2	Mechanical Engineering 418 Woodshop	1	4
Horticulture 407 Intro. to Landscape Art	2	0			
Mechanical Engineering 417 Woodshop	0	3			
Textile Engineering 417 Cotton Classing	0	2			
	8	7		4	4

And one of the following:

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Agricultural Engineering 411 Farm Machinery	2	2	Animal Husbandry 402 Live Stock Feeding	3	2
Forestry 401 Dendrology	3	0	Dairy Husbandry 412 Dairy Manufactures	2	4
One subject from List B, page 73.			Forestry 412 Silviculture	2	2
			Horticulture 402 Experimental Horticulture	2	2
			One subject from List B, page 73.		

GROUP 3. AGRICULTURAL EDUCATION (b).

(For students expecting permanent certificates.)

JUNIOR YEAR.

Agricultural Education 301 Educational Psychology	3	0	Agricultural Education 302 Methods of Teaching	3	0
Agricultural Education 303 Administration of Schools	3	0	Agricultural Education 304 High School Problems	3	0
*Entomology 301 Systematic	2	2	*Entomology 302 Economic	2	2
Textile Enginering 317 Cotton Classing	0	2	Horticulture 307 Intro. to Landscape Art	2	0
	8	4		10	2

*Or one subject from List A, p. 73.

SENIOR YEAR.

Agricultural Education 403 Rural Education	3	0	Agricultural Education 402 Adm. of H. S. Agriculture	3	0
Agricultural Education 405 Vocational Education	3	0	Agricultural Education 404 Agr. Extension and Dem.	3	0
Animal Husbandry 401 Animal Nutrition	3	2			
Agricultural Engineering 411 Farm Machinery	2	2			
	11	4		6	0

And one of the following:

Agricultural Engineering 407 Farm Motors	2	4	Animal Husbandry 402 Live Stock Feeding	3	2
Forestry 401 Dendrology	2	2	Biology 416 Rural Sanitation	2	4
Mechanical Engineering 417 Woodshop	0	3	Forestry 412 Silviculture	2	2
One subject from List B, page 73.			Mechanical Engineering 418 Woodshop	1	4
			One subject from List B, page 73.		

GROUP 4. AGRICULTURAL ENGINEERING.

JUNIOR YEAR.

Agricultural Engineering 301 Farm Machinery	2	2	Agricultural Engineering 302 Repair of Farm Machinery	1	4
Agricultural Engineering 303 Farm Buildings	2	4	Agricultural Engineering 306 Farm Motors	2	4
*Civil Engineering 319 Trigonometry and Surveying	3	4	*Agricultural Engineering 304 Drainage	2	2
	7	10		5	10

*Or one subject from List A, p. 73.

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Agricultural Engineering 401 Tractors	1	4	Agricultural Engineering 402 Automobiles	2	4
Agricultural Engineering 405 Pumps and Power Problems	2	0	Agricultural Engineering 408 Terracing	0	2
Agricultural Engineering 409 Farm Concrete	1	4	Chemistry 418 Technical Analysis	1	3
Horticulture 413 Spraying	1	2			
	5	10		3	9

And one of the following:

Agricultural Engineering 403 Irrigation	2	2	Agricultural Engineering 404 Experimental Agri. Engineering	0	6
One subject from List B, page 73.			One subject from List B, page 73.		

GROUP 5. AGRONOMY.

JUNIOR YEAR.

*Agricultural Engineering 301 Farm Machinery	2	2	Agricultural Engineering 304 Drainage	2	2
Civil Engineering 319 Farm Surveying	3	4	*Agronomy 304 Soil Mapping	1	4
Entomology 301 Systematic	2	2	Entomology 302 Economic	2	2
	7	8		5	8

*Or one subject from List A, p. 73.

SENIOR YEAR.

Agronomy 401 Plant Breeding	3	2	Agronomy 408 Advanced Soils	2	2
Agronomy 405 Use of Fertilizers and Manures	2	2	Agronomy 404 Marketing Problems	3	2
Animal Husbandry 401 Animal Nutrition	3	2			
	8	6		5	4

And one of the following:

Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 Adm. of H. S. Agriculture	3	0
Agronomy 403 Cost Accounting	2	2	Agronomy 406 Advanced Farm Management	1	4
Forestry 401 Dendrology	3	0	Chemistry 426 Historical Geology	3	0
Textile Engineering 413 Cotton Classing	2	2	Forestry 402 Wood Technology	2	2
One subject from List B, page 73.			One subject from List B, page 73.		

GROUP 6. ANIMAL HUSBANDRY.

JUNIOR YEAR.

Animal Husbandry 301 Hist. and Development of Breeds	2	2	Animal Husbandry 302 Animal Breeding	2	2
Biology 301 Embryology of Domestic Animals	2	4	*Entomology 306 Animal Parasites	2	2
*Entomology 301 Systematic	2	2	Veterinary Medicine 302 Obstetrics	2	2
	6	8		6	6

*Or one subject from List A, p. 73.

SENIOR YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Animal Husbandry 401 Animal Nutrition	3	2	Animal Husbandry 402 Live Stock Feeding	3	2
Animal Husbandry 403 Advanced Judging	1	4	Animal Husbandry 404 Live Stock Management	2	2
Veterinary Medicine 401 Infectious Diseases	2	0			
	6	6		5	4

And one of the following:

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 Adm. of H. S. Agriculture	3	0
Agricultural Engineering 411 Farm Machinery	2	2	Agricultural Engineering 406 Farm Motors	2	4
Animal Husbandry 405 Herd Book Study	0	4	Agronomy 406 Advanced Farm Management	1	4
Animal Husbandry 407 Poultry Feeding and Management	2	2	Animal Husbandry 408 Incubation and Brooding	2	2
One subject from List B, page 73.			One subject from List B, page 73.		

GROUP 7. BIOLOGY.

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 301 Embryology of Domestic Animals	2	4	Biology 302 Rural Sanitation	2	4
Biology 303 Plant Physiology	2	4	Biology 304 Plane Ecology	2	4
*Entomology 301 Systematic	2	2	*Entomology 302 Economic	2	2
	6	10		6	10

*Or one subject from List A, p. 73.

SENIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 401 Advanced Bacteriology	2	4	Biology 402 Soil Bacteriology	2	4
Biology 403 Plant Diseases	2	4	Biology 404 Plant Diseases	1	4
Biology 405 Plant Nutrition	2	4			
	6	12		3	8
And one subject from List B, page 73.			And one subject from List B, page 73.		

GROUP 8. DAIRY HUSBANDRY.

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
*Agricultural Engineering 311 Dairy Machinery	1	2	Animal Husbandry 302 Animal Breeding	2	2
Biology 301 Embryology of Domes. Animals	2	4	Biology 306 General Bacteriology	1	4
Dairy Husbandry 301 Technology of Milk	2	0	*Dairy Husbandry 302 Dairy Manufactures	2	4
Entomology 301 Systematic	2	2			
	7	8		5	10

*Or one subject from List A, p. 73.

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Animal Husbandry 401 Animal Nutrition	3	2	Dairy Husbandry 402 Milk Production	3	2
Biology 401 Advanced Bacteriology	2	4	Dairy Husbandry 404 Seminar	2	0
Dairy Husbandry 401 Herd Book Study	0	4			
Dairy Husbandry 405 Milk Inspection	1	2			
	6	12		5	2

And one of the following:

Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 Adm. of H. S. Agriculture	3	0
Dairy Husbandry 403 Factory Management	2	2	Agricultural Engineering 406 Farm Motors	2	4
Veterinary Medicine 401 Infectious Diseases	2	0	Chemistry 424 Dairy Chemistry	2	4
One subject from List B, page 73.			Veterinary Medicine 402 Obstetrics	2	2
			One subject from List B, page 73.		

GROUP 9. ENTOMOLOGY.

JUNIOR YEAR.

Biology 303 Plant Physiology	2	4	Entomology 304 Apiculture	2	2
Entomology 301 Systematic	2	2	Entomology 302 Economic	2	2
*Forestry 301 Principles of Forestry	2	2	*Horticulture 302 Plant Breeding	2	2
	6	8		6	6

*Or one subject from List A, p. 73.

SENIOR YEAR.

Entomology 401 Advanced Systematic	2	2	Entomology 402 Advanced Systematic	1	4
Entomology 403 Adv. Economic and Experiment	1	4	Entomology 404 Advanced Economic	2	2
*Entomology 405 Fruit Insects	2	4			
	5	10		3	6
*Or Horticulture 401 Pomology	3	2			

And one of the following:

Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 Adm. of H. S. Agriculture	3	0
Forestry 401 Drendrology	3	0	Forestry 402 Wood Technology	2	2
One subject from List B, page 73.			One subject from List B, page 73.		

GROUP 10. HORTICULTURE.

JUNIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Horticulture 303 Principles of Fruit Production	3	2	Horticulture 302 Plant Breeding	2	2
Entomology 301 Systematic	2	2	Entomology 302 Economic	2	2
*Horticulture 301 Spraying	1	2	*Horticulture 304 Nut Culture	2	4
	6	6		6	8

*Or one subject from List A, p. 73.

SENIOR YEAR.

Biology 403 Plant Diseases	2	4	Biology 404 Plant Diseases	1	4
Horticulture 401 Pomology	3	2	Horticulture 402 Experimental Horticulture	2	4
Horticulture 403 Sub-tropical Fruits	3	2			
	8	8		3	8

And one of the following:

Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 Adm. of H. S. Agriculture	3	0
Entomology 405 Fruit Insects	2	4	Forestry 402 Wood Technology	2	2
Forestry 401 Dendrology	3	0	Horticulture 408 Floriculture	2	2
Horticulture 405 Bush and Vine Fruits	2	2	Horticulture 410 Introduction to Landscape Art	2	0
Horticulture 411 Marketing	3	0	Horticulture 412 Horticultural By-products	1	4
One subject from List B, page 73.			One subject from List B, page 73.		

GROUP II. LANDSCAPE ART.

JUNIOR YEAR.

Civil Engineering 319 Trigonometry and Surveying	3	4	Drawing 316 Water Color	0	4
Drawing 315 Mechanical	0	2	Forestry 302 Sylviculture	2	2
Horticulture 307 Introduction to Landscape Design	2	0	Horticulture 308 History of Landscape Art	2	0
*Entomology 301 Systematic	2	0	*Entomology 302 Economic	2	2
	7	6		6	8

*Or one subject from List A, p. 73.

SENIOR YEAR.

Architecture 419 Theory of Design	1	0	Horticulture 408 Floriculture	2	2
Horticulture 407 Ornamentals	2	2	Horticulture 416 Landscape Design	3	2
Horticulture 415 Landscape Design	3	4			
Horticulture 417	2	0			
	8	6		5	4

And one of the following:

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Agricultural Education 401 Methods of Teaching	3	0	Agricultural Education 402 Adm. of H. S. Agriculture	3	0
Agronomy 403 Cost Accounting	2	2	Forestry 402 Wood Technology	2	2
Forestry 401 Dendrology	3	0	Horticulture 402 Experimental	2	4
One subject from List B, page 73.			One subject from List B, page 73.		

LIST A.

JUNIOR ELECTIVES.

The student may elect one line of the following in place of the subjects marked with a star in the preceding curricula.

English 311 Literature	3	0	English 312 Literature	3	0
Forestry 301 Principles of Forestry	3	0	Forestry 302 Sylviculture	2	2
History 301 Industrial History of England	3	0	History 302 Industrial History of U. S.	3	0
Military Science 301	3	2	Military Science 302	3	2
Mod. Language 311, 313 or 315 French, German or Spanish	3	0	Mod. Language 312. 314 or 316 French, German or Spanish	3	0

LIST B.

SENIOR ELECTIVES COMMON TO ALL GROUPS.

English 403 Public Speaking	3	0	English 404 Public Speaking	3	0
English 421a Literature	3	0	English 422a Literature	3	0
History 401 Industrial History of England	3	0	History 402 Industrial History of U. S.	3	0
Military Science 401	3	2	Military Science 402	3	2
Mod. Language 421, 423 or 425 French, German or Spanish	3	0	Mod. Language 422, 424 or 426 French, German or Spanish	3	0

C.—TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

Animal Husbandry 21 Market Types	0	6	Agronomy 28 Soils.	3	2
Biology 11 Zoology	3	2	Animal Husbandry 22 Breeds and Types	2	2
Dairy Husbandry 21 Elementary Dairying	2	2	Biology 12 Botany	3	2
English 11 Grammar, Composition	3	0	Dairy Husbandry 24 Farm Dairying	2	4
Horticulture 21 Plant Propagation	3	2	English 12 Grammar, Composition	3	0
Military Science 11	1	2	Horticulture 22 Vegetable Gardening	2	2
Textile Engineering 17 Cotton Classing	0	2	Military Science 12	1	2
	12	16		16	14

SECOND YEAR.

Eighteen term hours each term from the following, in addition to Military Science.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Agricultural Engineering 61 Farm Concrete	1	4	Agricultural Engineering 66 Farm Motors	2	4
Agricultural Engineering 53 Farm Machinery and Motors	2	2	Agronomy 52 Farm Equipment and Mgm.	3	2
Agricultural Engineering 55 Irrigation and Drainage	2	4	Animal Husbandry 52 Breeding	2	2
Agronomy 51 Elem. Crop Production	3	2	Animal Husbandry 54 Poultry	3	2
Animal Husbandry 55 Feeding	2	2	English 52 Practical Composition	3	0
English 51 Practical Composition	3	0	Entomology 54 Economic	2	2
Horticulture 53 Tree and Vine Fruits	3	2	Entomology 56 Elementary Apiculture	2	2
Horticulture 55 Spraying	1	2	Forestry 52 Elementary Forestry	3	0
Military Science 51	1	2	Horticulture 58 Nut Culture	2	2
			Military Science 52	1	2
			Veterinary Medicine 52 Animal Diseases	3	2

M.—TWO-YEAR COURSE IN AGRICULTURAL ENGINEERING.

FIRST YEAR.

First Term	Th.	Pr.	Second Term	Th.	Pr.
Agricultural Engineering 25 Farm Machinery	2	2	Agricultural Engineering 26 Farm Motors	2	4
Agricultural Engineering 27 Farm Concrete	1	4	Agronomy 24 Farm Crops	3	2
Agronomy 23 Soils	3	2	Civil Engineering 24 Surveying	2	4
Drawing 15 Mechanical	0	2	Drawing 16 Mechanical	0	2
English 11 Grammar and Composition	3	0	English 12 Grammar and Composition	3	0
Mathematics 13 Shop Mathematics	4	0	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 23 Woodshop	0	4	Mechanical Engineering 24 Forge	0	4
Military Science 11	1	2	Military Science 12	1	2
	14	16		14	18

SECOND YEAR.

First Term	Th.	Pr.	Second Term	Th.	Pr.
Agricultural Engineering 55 Irrigation and Drainage	1	4	Agricultural Engineering 56 Repairing Farm Machinery	1	4
Agricultural Engineering 57 Farm Buildings	2	4	Agricultural Engineering 58 Automobiles	2	4
Agricultural Engineering 59 Tractors	1	4	Agricultural Engineering 60 Testing	0	4
Dairy Husbandry 53 Farm Dairying	2	2	Animal Husbandry 56 Feeding	2	2
English 51 Practical Composition	3	0	Chemistry 52 Practical	3	4
Horticulture 55 Spraying Machinery	1	4	English 52 Practical Composition	3	0
Military Science 51	1	2	Military Science 52	1	2
	11	20		12	20

IX.—COURSE IN ARCHITECTURE.

FRESHMAN YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Architecture 101 Elements	0	9	Architecture 102 Elements	0	9
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 104 Descriptive Geometry	2	0
Drawing 103 Descriptive Geometry	2	0	Drawing 110 Freehand	0	4
Drawing 109 Freehand	0	3	Drawing 112 Shades, Shadows and Perspective	0	3
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Military Science 101	1	2	Military Science 102	1	2
	15	19		15	20

SOPHOMORE YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Architecture 201 Design	0	12	Architecture 202 Design	0	12
Architecture 205 Carpentry	2	0	Architecture 206 Carpentry	2	0
Architecture 207 History of Architecture	2	0	Architecture 208 History of Architecture	2	0
Drawing 209 Freehand	0	4	Architecture 210 Theory of Design	1	0
English 203 Composition	1	0	Civil Engineering 204 Analytic Mechanics	3	0
Mathematics 205 Calculus	5	0	Drawing 210 Freehand	0	4
Military Science 201	1	2	English 204 Composition	1	0
Physics 203 General	3	2	Military Science 202	1	2
			Physics 204 General	3	4
	14	20		13	22

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Architecture 301 Design	0	15	Architecture 302 Design	0	15
Architecture 305 Masonry	3	0	Architecture 306 Steel Construction	2	0
Architecture 307 Plumbing	2	0	Architecture 308 Heating	2	0
Architecture 309 History of Architecture	2	0	Architecture 310 Historic Ornament	2	0
Civil Engineering 317 Strength of Materials	2	2	Civil Engineering 324 Stresses	2	2
Drawing 309 Freehand	0	4	Drawing 310 Freehand	0	4
English 301 Argumentation	1	0	English 302 Argumentation	1	0
*English 311 Literature	3	0	*English 312 Literature	3	0
	13	21		12	21

*Or Military Science 301...... 3 2 *Or Military Science 302...... 3 2

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Architecture 401 Design	0	15	Architecture 402 Design	0	18
Architecture 405 History of Sculpture	1	0	Architecture 406 History of Painting	2	0
Civil Engineering 413 Reinforced Concrete	2	2	Architecture 408 Business Practice	2	0
Civil Engineering 431 Stresses	2	3	Drawing 410 Freehand	0	4
Drawing 409 Freehand	0	4	Economics 404 Business Organization	3	0
Economics 403 Fundamental Principles	3	0	Electrical Engineering 432 Electrical Lighting	2	2
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401	1	0			
	10	24		10	24

And one of the following:

English 421 Literature	2	0	English 422 Literature	2	0
History 403 Amer. History and Government	2	0	History 404 Amer. History and Government	2	0
Military Science 401	3	2	Military Science 402	3	2
Mod. Language 421, 423, 425 French, German or Spanish	3	0	Mod. Language 422, 424, 426 French, German or Spanish	3	0

VII.—COURSE IN ARCHITECTURAL ENGINEERING.

The Freshman and Sophomore years of the Course in Architectural Engineering are identical with those of the Course in Architecture, which see.

JUNIOR YEAR.

Architecture 303 Structural Design	0	12	Architecture 304 Structural Design	0	12
Architecture 305 Masonry	3	0	Architecture 306 Steel Construction	2	0
Architecture 307 Plumbing	2	0	Architecture 308 Heating	2	0
Architecture 309 History of Architecture	2	0	Civil Engineering 324 Stresses	2	2
Civil Engineering 305 Mechanics of Materials	4	2	Drawing 310 Freehand	0	4
Drawing 309 Freehand	0	4	Electrical Engineering 310 Electric Lighting	2	2
English 301 Argumentation	1	0	English 302 Argumentation	1	0
*English 311 Literature	3	0	*English 312 Literature	3	0
	15	18		12	20
**Or* Military Science 301	3	2	**Or* Military Science 302	3	2

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Architecture 403 Structural Design	0	15	Architecture 404 Structural Design	0	18
Civil Engineering 413 Reinforced Concrete	2	2	Architecture 408 Business Practice	2	0
Civil Engineering 431 Stresses	2	3	Civil Engineering 438 Higher Structures	2	3
Civil Engineering 433 Surveying	2	2	Chemistry 406 Geology	3	2
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Military Science 401	1	0			
	11	22		11	23

And one of the following:

Architecture 409 Fire Prevention Eng.	2	0	Architecture 410 Building Codes	2	0
English 421 Literature	2	0	English 422 Literature	2	0
History 403 Amer. History and Government	2	0	History 404 Amer. History and Government	2	0
Military Science 401	3	2	Military Science 402	3	2
Mod. Language 421, 423, 425 French, German or Spanish	3	0	Mod. Language 422, 424, 426 French, German or Spanish	3	0

VIII.—COURSE IN CHEMICAL ENGINEERING.

FRESHMAN YEAR.

Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	1	0	Mechanical Engineering 102 Elementary Mechanics	1	0
Mechanical Engineering 103 Carpentry	0	3	Mechanical Engineering 104 Forging	0	3
Military Science 101	1	2	Military Science 102	1	2
	16	11		16	11

SOPHOMORE YEAR.

First Term.	Hours per week. Th.	Hours per week. Pr.	Second Term.	Hours per week. Th.	Hours per week. Pr.
Chemistry 205 Qualitative Analysis	1	8	Chemical Engineering 202 Quantitative Analysis	1	6
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
English 211 Literature	3	0	English 212 Literature	3	0
Mathematics 203 Calculus	5	0	Mathematics 204 Calculus	3	0
Military Science 101	1	2	Mechanical Engineering 206 Elementary Steam Eng.	3	0
Physics 203 General	3	2	Military Science 202	1	2
			Physics 204 General	3	4
	14	16		15	14

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Chemical Engineering 301 Adv. Quantitative Analysis	2	8	Chemical Engineering 302 Adv. Quantitative Analysis	1	3
Chemical Engineering 307 Industrial	3	0	Chemistry 302 Organic	3	4
Chemistry 301 Organic	2	4	Chemistry 306 Geology	3	2
Chemistry 305 History	1	0	Civil Engineering 314 Strength of Materials	2	2
Electrical Engineering 305 Electrical Machinery	2	0	Electrical Engineering 306 Electrical Machinery	2	3
English 301 Argumentation	1	0	English 302 Argumentation	1	0
*English 321 Literature	2	0	*English 322 Literature	2	0
Mechanical Engineering 315 Mechanical Laboratory	0	3			
	13	15		14	14
**Or* Military Science 301	3	2	**Or* Military Science 302	3	2

SENIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Chemical Engineering 401 Physical Chemistry	3	4	Chemical Engineering 402 Physical Chemistry	3	4
Chemical Engineering 403 Technical Analysis	2	8	Chemical Engineering 404 Technical Analysis	2	6
Economics 403 Fundamental Principles	3	0	Chemical Engineering 406 Microchemical Methods	0	2
English 401 Public Speaking	1	0	Economics 404 Business Organization	3	0
Elective	6	0	English 402 Public Speaking	1	0
			Elective	6	0
	15	12		15	12

Notes.—1. The electives selected by the student are subject to the approval of the head of the Chemical Engineering Department. Members of the R. O. T. C. must include Military Science 401, 402 among their electives.

2. To those students desiring to do so, an opportunity will be given to specialize in the study of the cotton seed oil industry.

IV.—COURSE IN CIVIL ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week. Th.	 Pr.	Second Term.	Hours per week. Th.	 Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	1	0	Mechanical Engineering 102 Elementary Mechanics	1	0
Mechanical Engineering 103 Carpentry	0	3	Mechanical Engineering 104 Forging	0	3
Military Science 101	1	2	Military Science 102	1	2
	16	11		16	11

SOPHOMORE YEAR.

Civil Engineering 201 Plane Surveying	3	4	Civil Engineering 202 Railroad Engineering	2	4
Drawing 201 Mechanical	0	4	Civil Engineering 204 Analytic Mechanics	3	0
English 203 Composition	1	0	Drawing 202 Mechanical	0	2
English 211 Literature	3	0	English 204 Composition	1	0
Mathematics 203 Calculus	5	0	English 212 Literature	3	0
Military Science 101	1	2	Mathematics 204 Calculus	3	0
Physics 203 General	3	2	Military Science 202	1	2
			Physics 204 General	3	4
	16	12		16	12

GROUP 1. GENERAL CIVIL ENGINEERING.

JUNIOR YEAR.

Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 303 Railroad Construction	3	4	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 306 Masonry	3	0
Civil Engineereing 311 Hydraulics	2	0	Civil Engineering 308 Roofs and Bridges	3	0
Drawing 307 Topographic	0	2	Civil Engineering 310 Water Supply Engineering	2	0
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 312 Hydraulics	2	2
English 301 Argumentation	1	0	Electrical Engineering 306 Electrical Machinery	2	3
Mechanical Engineering 305 Elementary Steam Engineering	2	0	English 302 Argumentation	1	0
	14	10		15	7

And one of the following:

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
English 321 Literature	2	0	English 322 Literature	2	0
History 303 Amer. History and Government	2	0	History 304 Amer. History and Government	2	0
Military Science 301	3	2	Military Science 302	3	2
Mod. Language 321, 323, 325 French, German or Spanish	3	0	Mod. Language 322, 324, 326 French, German or Spanish	3	0

SUMMER WORK.

Civil Engineering 400. Field practice, four weeks.

SENIOR YEAR.

Civil Engineering 401 Railroad Drafting	0	4	Chemistry 406 Geology	3	2
Civil Engineering 403 Roofs and Bridges	2	8	Civil Engineering 402 Sewerage	2	0
Civil Engineering 407 Roads and Pavements	3	0	Civil Engineering 408 Higher Structures	4	4
Civil Engineering 413 Reinforced Concrete	2	2	Civil Engineering 410 Contracts and Specifications	2	0
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
	11	14		15	6

Three term hours each term from the following:

Military Science 401	3	2	Military Science 402	3	2
Civil Engineering 409 Irrigation and Drainage	3	0	Civil Engineering 404 Bridge Design	0	4
Civil Engineering 417 Highway Materials	2	2	Civil Engineering 418 Cost Keeping	1	0

GROUP 2. HIGHWAY ENGINEERING.

JUNIOR YEAR.

Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 303 Railroad Construction	3	4	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 305 Mechanics and Materials	4	2	Civil Engineering 308 Roofs and Bridges	3	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 310 Water Supply Engineering	2	0
Drawing 307 Topographic	0	2	Civil Engineering 312 Hydraulics	2	2
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering. 306 Masonry	3	0
English 301 Argumentation	1	0	Electrical Engineering 306 Electrical Machinery	2	3
Mechanical Engineering 305 El. St. Eng.	2	0	English 302 Argumentation	1	0
	14	10		15	7

And one of the following:

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
English 321 Literature	2	0	English 322 Literature	2	0
History 303 Amer. History and Government	2	0	History 304 Amer. History and Government	2	0
Military Science 301	3	2	Military Science 302	3	2
Mod. Language 321, 323, 325 French, German or Spanish	3	0	Mod. Language 322, 324, 326 French, German or Spanish	3	0

SUMMER WORK.

Civil Engineering 400. Field practice, four weeks.

SENIOR YEAR.

Civil Engineering 413 Reinforced Concrete	2	2	Chemistry 406 Geology	3	2
Civil Engineering 415 Highway Cons. and Maintenance	4	0	Civil Engineering 410 Contracts and Specifications	2	0
Civil Engineering 423 Bridge Design	0	4	Civil Engineering 416 Highway Cons. and Maintenance	3	0
Civil Engineering 417 Highway Materials	2	2	Civil Engineering 426 Highway Bridges and Culverts	1	4
Civil Engineering 429 Highway Laws, Econs., Organ.	2	0	Civil Engineering 402 Sewerage	2	0
Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
	14	8		15	6

Three term hours each term from the following:

Civil Engineering 401 Railroad Drafting	0	4	Civil Engineering 404 Bridge Design	0	4
Civil Engineering 419 Road and Street Systems	1	0	Civil Engineering 420 St. Cleaning & Refuse Disposal	1	0
Military Science 401	3	2	Military Science 402	3	2

GROUP 3. MUNICIPAL AND SANITARY ENGINEERING.

JUNIOR YEAR.

Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 303 Railroad Construction	3	4	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 306 Masonry	3	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 308 Roofs and Bridges	3	0
Chemistry 307 Quantitative Analysis	1	4	Civil Engineering 310 Water Supply Engineering	2	0
Electrical Engineering 305 Electrical Machinery	2	0	Civil Engineering 312 Hydraulics	2	2
English 301 Argumentation	1	0	Chemistry 310 Water Analysis	1	3
Mechanical Engineering 305 Elem. Steam Engineering	2	0	Electrical Engineering 306 Electrical Machinery	2	3
			English 302 Argumentation	1	0
	15	12		16	10

And one of the following:

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
English 321 Literature	2	0	English 322 Literature	2	0
History 303 Amer. History and Government	2	0	History 304 Amer. History and Government	2	0
Military Science 301	3	2	Military Science 302	3	2
Mod. Language 321, 323, 325 French, German or Spanish	3	0	Mod. Language 322, 324, 326 French, German or Spanish	3	0

SUMMER WORK.

Civil Engineering 400. Field practice, four weeks.

SENIOR YEAR.

Biology 421 Bacteriology	2	4	Chemistry 406 Geology	3	2
Civil Engineering 413 Reinforced Concrete	2	2	Civil Engineering 410 Contracts and Specifications	2	0
Civil Engineering 415 Highway Cons. and Maintenance	4	0	Civil Engineering 416 Highway Cons. and Maintenance	3	0
Civil Engineering 423 Bridge Design	0	4	Civil Engineering 428 Sewerage and Filtration	3	4
Economics 403 Fundamental Principle	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
	12	10		15	6

Three term hours each term from the following:

Civil Engineering 401 Railroad Drafting	0	4	Civil Engineering 404 Bridge Design	0	4
Civil Engineering 419 Road and Street Systems	1	0	Civil Engineering 418 Cost Keeping	1	0
Civil Engineering 417 Highway Materials	2	2	Civil Engineering 420 St. Cleaning and Refuse Disposal	1	0
Military Science 401	3	2	Military Science 402	3	2

GROUP 4.

JUNIOR YEAR.

Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 303 Railroad Construction	3	4	Civil Engineering 306 Masonry	3	0
Civil Engineering 305 Mechanics of Materials	4	0	Civil Engineering 308 Roofs and Bridges	3	0
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 312 Hydraulics	2	2
Drawing 307 Topographic	0	2	Electrical Engineering 306 Electrical Machinery	2	3
Electrical Engineering 305 Electrical Machinery	2	0	English 302 Argumentation	1	0
English 301 Argumentation	1	0	Military Science 302	3	2
Military Science 301	3	2	Mod. Language 322, 324, or 326 French, German or Spanish	3	0
Mod. Language 321, 323 or 325 French, German or Spanish	3	0			
	18	10		17	9

SUMMER WORK.

Civil Engineering 400. Field practice, four weeks.

SENIOR YEAR.

First Term.	Hours per week. Th.	Hours per week. Pr.	Second Term.	Hours per week. Th.	Hours per week. Pr.
Civil Engineering 401 Railroad Drafting	0	4	Chemistry 406 Geology	3	2
Civil Engineering 407 Roads and Pavements	3	0	Civil Engineering 402 Sewerage	2	0
Civil Engineering 413 Reinforced Concrete	2	2	Civil Engineering 410 Contracts and Specifications	2	0
Civil Engineering 423 Bridge Design	0	4	Civil Engineering 426 Highway Bridges and Culverts	1	4
Civil Engineering 429 Highway Laws, Econs., Organ.	2	0	Economics 404 Business Organization	3	0
Economics 403 Fundamental Principles	3	0	English 402 Public Speaking	1	0
English 401 Public Speaking	1	0	History 406 General	3	0
History 405 General	3	0	Military Science 402	3	2
Military Science 401	3	2			
	17	12		18	8

V.—COURSE IN ELECTRICAL ENGINEERING.

FRESHMAN YEAR.

Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Machanics	1	0	Mechanical Engineering 102 Elementary Mechanics	1	0
Mechanical Engineering 103 Carpentry	0	3	Mechanical Engineering 104 Forging	0	3
Military Science 101	1	2	Military Science 102	1	2
	16	11		16	11

SOPHOMORE YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
Electrical Engineering 201 Electricity and Magnetism	3	4	Electrical Engineering 202 Electrical Measurements	4	4
English 203 Composition	1	0	English 204 Composition	1	0
English 211 Literature	3	0	English 212 Literature	3	0
Mathematics 203 Calculus	5	0	Mathematics 204 Calculus	3	0
Mechanical Engineering 201 Pattern Making and Foundry	0	4	Military Science 202	1	2
Military Science 101	1	2	Physics 208 General	2	2
Physics 207 General	2	2	Civil Engineering 206 Surveying and Leveling	2	3
	15	16		16	13

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Electrical Engineering 301 Direct Currents	4	6	Civil Engineering 316 Mechanics of Materials	4	2
English 301 Argumentation	1	0	Electrical Engineering 302 Alternating Currents	5	4
*English 321 Literature	2	0	Electrical Engineering 304 D. C. Design	1	4
Mechanical Engineering 301 Steam Engines and Boilers	2	0	English 302 Argumentation	1	0
Mechanical Engineering 307 Kinematics	2	0	*English 322 Literature	2	0
Mechanical Engineering 317 Engineering Mechanics	4	0	Mechanical Engineering 302 Steam Engines and Boilers	3	0
Mechanical Engineering 325 Machine Shop Practice	0	4			
	15	10		16	10
**Or* Military Science 301	3	2	**Or* Military Science 302	3	2

SENIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Electrical Engineering 405 Contracts and Specifications	2	0	Economics 404 Business Organization	3	0
Economics 403 Fundamental Principles	3	0	Electrical Engineering 402 Alt. Current Machinery	3	4
Electrical Engineering 401 Alt. Current Machinery	4	4	Electrical Engineering 406 Power Distribution	2	2
Electrical Engineering 403 Electrical Machine Design	2	4	Electrical Engineering 408 General Problems	0	2
Electrical Engineering 429 Applications	2	0	English 402 Public Speaking	1	0
English 401 Public Speaking	1	0	Mechanical Engineering 416 Engineering Laboratory	0	3
Mechanical Engineering 415 Engineering Laboratory	0	2	*Civil Engineering 412 Hydraulics	2	2
*Civil Engineering 411 Hydraulics	2	0	Elective	2	2
	16	10		13	15
*Military Science 401	3	2	*Military Science 402	3	2

The elective is to be selected from the following:

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Electrical Engineering 424.... Electrical Railways	2	2	Electrical Engineering 428.... Telephony	2	2
Electrical Engineering 426.... Illumination	2	2	Electrical Engineering 430.... Plant Mgm. & Tech. Writing	2	2

Note.—Students desiring to apply for a commission as second lieutenant in the Coast Artillery Corps may be allowed by the Dean to make the following substitutions which, if the student has elected Modern Language in the Sophomore year and the Military Science subjects in the Junior and Senior years, will prepare the students for the examinations for such commission:

JUNIOR YEAR.

Mod. Language 321, 323, 325.. French, German, or Spanish	3	0	Mod. Language 322, 324, 325.. French, German, or Spanish	3	0
		For			
Mechanical Engineering 307... Kinematics	3	0	Electrical Engineering 304.... D. C. Design	1	4

SENIOR YEAR.

History 405 .... General	3	0	History 406 .... General	3	0
		For			
Electrical Engineering 403.... Elec. Machine Design	2	4	Electrical Engineering 406.... Power Distribution	2	2

XI.—COURSE IN GENERAL ENGINEERING.

FRESHMAN YEAR.

Chemistry 101 .... Inorganic	3	2	Chemistry 102 .... Inorganic	3	2
Drawing 101 .... Mechanical	0	3	Drawing 102 .... Mechanical	0	3
Drawing 103 .... Descriptive Geometry	2	0	Drawing 104 .... Descriptive Geometry	2	0
Drawing 105 .... Freehand	0	1	Drawing 106 .... Freehand	0	1
English 103 .... Rhetoric and Composition	3	0	English 104 .... Rhetoric and Composition	3	0
Mathematics 101 .... Algebra	3	0	Mathematics 102 .... Algebra	3	0
Mathematics 103 .... Trigonometry	3	0	Mathematics 104 .... Analytics	3	0
Mechanical Engineering 101... Elementary Mechanics	1	0	Mechanical Engineering 102... Elementary Mechanics	1	0
Mechanical Engineering 103... Carpentry	0	3	Mechanical Engineering 104... Forging	0	3
Military Science 101.........	1	2	Military Science 102.........	1	2
	16	11		16	11

SOPHOMORE YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Chemistry 207 Quantitative Analysis	1	4	Civil Engineering 202 Railroad Engineering	2	4
Civil Engineering 201 Plane Surveying	3	4	Civil Engineering 204 Analytic Mechanics	3	0
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
Mathematics 203 Calculus	5	0	Mathematics 204 Calculus	3	0
Military Science 101	1	2	Mechanical Engineering 206 Elem. Steam Engineering	3	0
Physics 203 General	3	2	Military Science 202	1	2
			Physics 204 General	3	4
	14	16		16	12

JUNIOR YEAR.

Civil Engineering 301 Graphics	0	2	Civil Engineering 302 Graphics	0	2
Civil Engineering 305 Mechanics of Materials	4	2	English 302 Argumentation	1	0
English 301 Argumentation	1	0	English 312 Literature.	3	0
English 311 Literature	3	0	Elective	17	0
Elective	11	0			
	19	4		21	2

SENIOR YEAR.

Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
*English 421 Literature	2	0	*English 422 Literature	2	0
Elective	15	0	Elective	15	0
	21	0		21	0
*Or Mod. Lan. 421, 423, or 425 French, German or Spanish	2	0	*Or Mod. Lan. 422, 424, or 426 French, German or Spanish	2	0
Or History 303 Amer. History and Government	2	0	Or History 304 Amer. History and Government	2	0

ELECTIVES.

Of the electives for the Junior and Senior years, not less than seven term hours must be in each of the departments of Civil, Electrical and Mechanical Engineering. The electives must be chosen under the advice and direction of the Dean of Engineering.

Chemical Engineering 407 Industrial	3	0	Chemical Engineering 408 Metallurgy	2	0
Civil Engineering 303 Railroad Construction	3	4	Chemistry 406 Geology	3	2
Civil Engineering 311 Hydraulics	2	0	Civil Engineering 304 Railroad Construction	2	0
Civil Engineering 401 Railroad Drafting	0	3	Civil Engineering 306 Roads and Pavements	3	0

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Civil Engineering 403 Roofs and Bridges	2	8	Civil Engineering 310 Water Supply Engineering	2	0
Civil Engineering 405 General	0	3	Civil Engineering 312 Hydraulics	2	2
Civil Engineering 407 Masonry	3	0	Civil Engineering 322 Rural Highways	3	0
Civil Engineering 409 Irrigation and Drainage	2	0	Civil Engineering 402 Sewerage	2	0
Civil Engineering 413 Reinforced Concrete	2	2	Civil Engineering 404 Bridge Design	0	4
			Civil Engineereing 406 General	0	3
			Civil Engineering 408 Higher Structures	3	4
			Civil Engineering 410 Contracts and Specifications	2	0
			Economics 306 Business Law	2	0
Electrical Engineering 301 Direct Currents	5	6	Electrical Engineering 302 Alternating Currents	5	6
Electrical Engineering 307 Electrical Machinery	3	0	Electrical Engineering 304 Problems	0	2
Electrical Engineering 401 Alternating Current Machinery	3	6	Electrical Engineering 308 Electrical Machinery	3	3
Electrical Engineering 403 Electrical Machine Design	3	4	Electrical Engineering 402 Alternating Current Machinery	3	4
Electrical Engineering 421 General	2	0	Electrical Engineering 404 Power Plant Design	1	3
Electrical Engineering 423 Electrical Railways	2	0	Electrical Engineering 422 General	2	0
Electrical Engineering 425 Illumination	2	0	Electrical Engineering 424 Electrical Railways	2	0
Electrical Engineering 427 Telephony	2	0	Electrical Engineering 426 Illumination	2	0
Electrical Engineering 429 Industrial Applications	2	0	Electrical Engineering 428 Telephony	2	0
			Electrical Engineering 430 Plant Mgm. & Tech. Writing	2	0
Mechanical Engineering 301 Engines and Boilers	2	0	Mechanical Engineering 302 Engines and Boilers	3	0
Mechanical Engineering 303 Machine Design	0	5	Mechanical Engineering 304 Machine Design	0	5
Mechanical Engineering 309 Machine Shop Practice	0	6	Mechanical Engineering 310 Machine Shop Practice	0	5
Mechanical Engineering 401 Engineering Design	0	4	Mechanical Engineering 402 Engineering Design	0	4
Mechanical Engineering 403 Engineering Laboratory	0	6	Mechanical Engineering 404 Engineering Laboratory	0	4
Mechanical Engineering 405 Engineering Design	3	0	Mechanical Engineering 406 Engineering Design	3	0
Mechanical Engineering 407 Thermodynamics	4	0	Mechanical Engineering 408 Thermodynamics	2	0
			Mechanical Engineering 410 Gas Engines	2	0
Military Science 301	3	2	Military Science 302	3	2
Military Science 401	3	2	Military Science 402	3	2
Mod. Lan. 211, 213, or 215 French, German or Spanish	3	0	Mod. Lan. 212, 214, or 216 French, German or Spanish	3	0

III.—COURSE IN MECHANICAL ENGINEERING.

FRESHMAN YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 106 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	1	0	Mechanical Engineering 102 Elementary Mechanics	1	0
Mechanical Engineering 103 Carpentry	0	3	Mechanical Engineering 104 Forging	0	3
Military Science 101	1	2	Military Science 102	1	2
	16	11		16	11

SOPHOMORE YEAR.

Chemistry 207 Quantitative Analysis	1	4	Chemistry 208 Technical Analysis	1	3
Drawing 201 Mechanical	0	4	English 204 Composition	1	0
English 203 Composition	1	0	Mathematics 204 Calculus	3	0
Mathematics 203 Calculus	5	0	Mechanical Engineering 202 Pattern Making and Foundry	0	4
Mechanical Engineering 201 Pattern Making and Foundry	0	4	Mechanical Engineering 208 Kinematics	3	0
Mechanical Engineering 203 Principles of Manufacture	1	0	Mechanical Engineering 210 Kinematic Drawing	0	3
Mechanical Engineering 205 Elem. Steam Engineering	2	0	Mechanical Engineering 216 Engineering Mechanics	2	0
Military Science 201	1	2	Military Science 202	1	2
Physics 203 General	3	2	Physics 204 General	3	4
	14	16		14	16

JUNIOR YEAR.

Civil Engineering 305 Mechanics of Materials	4	2	Civil Engineering 318 Surveying and Stresses	3	3
Electrical Engineering 307 Electrical Machinery	3	0	Electrical Engineering 308 Electrical Machinery	3	3
English 301 Argumentation	1	0	English 302 Argumentation	1	0
*English 311 Literature	3	0	*English 312 Literature	3	0
Mechanical Engineering 301 Engines and Boilers	2	0	Mechanical Engineering 302 Engines and Boilers	3	0
Mechanical Engineering 303 Machine Design	0	5	Mechanical Engineering 304 Machine Design	0	5
Mechanical Engineering 309 Machine Shop Practice	0	6	Mechanical Engineering 310 Machine Shop Practice	0	5
Mechanical Engineering 313 Engineering Mechanics	3	0			
	15	13		13	16
**Or* Military Science 301	3	2	**Or* Military Science 302	3	2

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Chemical Engineering 407 Industrial	3	0	Chemical Engineering 408 Metallurgy	2	0
Civil Engineering 411 Hydraulics	2	0	Civil Engineering 412 Hydraulics	2	2
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Mechanical Engineering 401 Engineering Design	0	4	Mechanical Engineering 402 Engineering Design	0	4
Mechanical Engineering 403 Engineering Laboratory	0	6	Mechanical Engineering 404 Engineering Laboratory	0	4
Mechanical Engineering 405 Engineering Design	3	0	Mechanical Engineering 406 Engineering Design	3	0
Mechanical Engineering 407 Thermodynamics	4	0	Mechanical Engineering 408 Thermodynamics	2	0
			Mechanical Engineering 410 Gas Engines	2	0
	13	10		12	10

And one of the following:

Economics 403 Fundamental Principles	3	0	Economics 404 Business Organization	3	0
English 421 Literature	2	0	English 422 Literature	2	0
History 403 Amer. History and Government	2	0	History 404 Amer. History and Government	2	0
Military Science 401	3	2	Military Science 402	3	2
Mod. Lan. 421, 423, or 425 French, German or Spanish	3	0	Mod. Lan. 422, 424, or 426 French, German or Spanish	3	0

Note.—To those students desiring to do so, an opportunity will be given to specialize in the study of the cotton seed oil industry.

VI.—COURSE IN TEXTILE ENGINEERING.

FRESHMAN YEAR.

Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
Drawing 101 Mechanical	0	3	Drawing 102 Mechanical	0	3
Drawing 103 Descriptive Geometry	2	0	Drawing 104 Descriptive Geometry	2	0
Drawing 105 Freehand	0	1	Drawing 108 Freehand	0	1
English 103 Rhetoric and Composition	3	0	English 104 Rhetoric and Composition	3	0
Mathematics 101 Algebra	3	0	Mathematics 102 Algebra	3	0
Mathematics 103 Trigonometry	3	0	Mathematics 104 Analytics	3	0
Mechanical Engineering 101 Elementary Mechanics	1	0	Mechanical Engineering 102 Elementary Mechanics	1	0
Mechanical Engineering 103 Carpentry	0	3	Mechanical Engineering 104 Forging	0	3
Military Science 101	1	2	Military Science 102	1	2
	16	11		16	11

SOPHOMORE YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Chemistry 201 Organic	2	4	Chemistry 202 Organic	3	4
Drawing 201 Mechanical	0	4	Drawing 202 Mechanical	0	2
English 203 Composition	1	0	English 204 Composition	1	0
English 211 Literature	3	0	English 212 Literature	3	0
Mechanical Engineering 205 Elem. Steam Engineering	2	0	Mechanical Engineering 208 Kinematics	3	0
Military Science 201	1	2	Military Science 202	1	2
Physics 203 General	3	2	Physics 204 General	3	4
Textile Engineering 201 Designing	3	2	Textile Engineering 202 Designing	3	0
	15	14		17	12

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Electrical Engineering 305 Electrical Machinery	2	0	Chemistry 308 Dyeing	2	2
English 301 Argumentation	1	0	Electrical Engineering 306 Electrical Machinery	2	3
Mechanical Engineering 321 Machine Shop Practice	0	6	English 302 Argumentation	1	0
Textile Engineering 301 Yarn Manufacture	4	2	Textile Engineering 302 Yarn Manufacture	2	2
Textile Engineering 303 Designing	3	0	Textile Engineering 304 Designing	3	0
Textile Engineering 305 Weaving	3	2	Textile Engineering 306 Weaving	3	3
Textile Engineering 307 Fabric Analysis	1	0			
	14	10		13	10

And one of the following:

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
English 321 Literature	2	0	English 322 Literature	2	0
History 303 Amer. History and Government	2	0	History 304 Amer. History and Government	2	0
Mod. Lan. 321, 323, or 325 French, German or Spanish	3	0	Mod. Lan. 322, 324, or 326 French, German or Spanish	3	0
Military Science 301	3	2	Military Science 302	3	2

SENIOR YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Chemistry 407 Quantitative Analysis	1	4	Chemistry 408 Quantitative Analysis	1	3
*Economics 403 Fundamental Principles	3	0	*Economics 404 Business Organization	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
Textile Engineering 401 Yarn Manufacture	3	4	Textile Engineering 402 Yarn Manufacture	3	4
Textile Engineering 405 Sizing	3	0	Textile Engineering 404 Fabric Analysis	1	0
Textile Engineering 407 Weaving	3	4	Textile Engineering 406 Sizing	3	0
			Textile Engineering 408 Weaving	0	4
			Textile Engineering 410 Mill Management	3	0
			Textile Engineering 412 Magazine Review	1	0
	14	12		16	11
**Or* Military Science 401	3	2	**Or* Military Science 402	3	2

F.—TWO-YEAR COURSE FOR ELECTRICIANS.

FIRST YEAR.

Drawing 11 Mechanical	0	3	Drawing 12 Mechanical	0	3
Drawing 13 Freehand	0	1	Drawing 14 Freehand	0	1
English 11 Grammar, Composition	3	0	English 12 Grammar, Composition	3	0
Electrical Engineering 21 Electricity and Magnetism	3	4	Electrical Engineering 22 Direct Currents	3	4
Mathematics 13 Shop Mathematics	4	0	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 25 Forging	0	4	Mechanical Engineering 42 Machine Shop Practice	0	6
Military Science 11	1	2	Military Science 12	1	2
Physics 11 Elementary	3	4	Physics 12 Elementary	3	4
	14	18		13	20

SECOND YEAR.

Drawing 53 Mechanical	0	2	Electrical Engineering 56 Meters	2	0
English 51 Practical Composition	3	0	Electrical Engineering 58 Electrical Machinery	6	0
Electrical Engineering 55 Alternating Currents	3	0	Electrical Engineering 62 Electrical Laboratory	0	10
Electrical Engineering 57 Wiring and Illumination	3	0	Electrical Engineering 64 Business Forms	1	0
Electrical Engineering 61 Electrical Laboratory	0	8	Mechanical Engineering 64 Engineering Laboratory	0	3
Mechanical Engineering 63 Engineering Laboratory	0	3	Mechanical Engineering 70 Power Plant Practice	0	2
Mechanical Engineering 69 Carpentry	0	4	Mechanical Engineering 76 Engines, Valves, Indicators	4	0
Mechanical Engineering 75 Engines, Valves, Indicators	4	0	Military Science 52	1	2
Military Science 51	1	2			
	14	19		14	17

G.—TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

FIRST YEAR.

First Term.	Hours per week. Th.	Pr.
Drawing 11 Mechanical	0	3
Drawing 13 Freehand	0	1
English 11 Grammar, Composition	3	0
Mathematics 13 Shop Mathematics	4	0
Mechanical Engineering 23 Carpentry	0	4
Mechanical Engineering 25 Forging	0	4
Mechanical Engineering 31 Elementary Mechanics	2	0
Mechanical Engineering 47 Pat. Mkg. and Fdy.	0	4
Mechanical Engineering 45 Engines, Valves, Indicators	3	0
Military Science 11	1	2
	13	18

Second Term.	Hours per week. Th.	Pr.
Chemistry 22 Practical	3	4
Drawing 12 Mechanical	0	3
Drawing 14 Freehand	0	1
English 12 Grammar, Composition	3	0
Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 32 Elementary Mechanics	2	0
Mechanical Engineering 42 Machine Shop Practice	0	6
Mechanical Engineering 46 Boilers and Power Plants	3	0
Military Science 12	1	2
	15	16

SECOND YEAR.

Electrical Engineering 51 Applied Electricity	3	4
Mechanical Engineering 53 Technical Literature	2	0
Mechanical Engineering 55 General Mech. Engineering	3	0
Mechanical Engineering 57 Internal Combustion Engines	3	0
Mechanical Engineering 59 Machine Design	2	4
Mechanical Engineering 61 Machine Shop Practice	0	4
Mechanical Engineering 63 Eng. Lab. Practice	0	3
Military Science 51	1	2
	14	17

Electrical Engineering 52 Applied Electricity	3	4
Mechanical Engineering 54 Technical Literature	2	0
Mechanical Engineering 56 Gen. Mech. Eng.	3	0
Mechanical Engineering 58 Refrigeration	2	0
Mechanical Engineering 60 Machine Design	2	4
Mechanical Engineering 62 Machine Shop Practice	0	3
Mechanical Engineering 64 Eng. Lab. Practice	0	3
Mechanical Engineering 68 Power Plant Practice	0	4
Military Science 52	1	2
	13	20

H.—TWO-YEAR COURSE IN TEXTILE ENGINEERING.

FIRST YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Drawing 11 Mechanical	0	3	Drawing 12 Mechanical	0	3
Drawing 13 Freehand	0	1	Drawing 14 Freehand	0	1
English 11 Grammar, Composition	3	0	English 12 Grammar, Composition	3	0
Mechanical Engineering 23 Carpentry	0	4	Mechanical Engineering 24 Forging	0	4
Military Science 11	1	2	Military Science 12	1	2
Textile Engineering 11 Designing	3	0	Textile Engineering 12 Designing	3	0
Textile Engineering 13 Yarn Manufacture	3	2	Textile Engineering 14 Yarn Manufacture	3	4
Textile Engineering 15 Weaving	3	4	Textile Engineering 16 Weaving	3	2
	13	16		13	16

SECOND YEAR.

Drawing 51 Mechanical	0	4	Drawing 52 Mechanical	0	4
English 51 Practical Composition	3	0	English 52 Practical Composition	3	0
Mechanical Engineering 77 Pattern Making and Foundry	0	4	Mechanical Engineering 78 Machine Shop Practice	0	4
Military Science 51	1	2	Military Science 52	1	2
Textile Engineering 51 Yarn Manufacture	3	2	Textile Engineering 52 Yarn Manufacture	3	4
Textile Engineering 53 Designing	3	0	Textile Engineering 54 Designing	3	0
Textile Engineering 55 Weaving	3	4	Textile Engineering 56 Weaving	0	2
Textile Engineering 57 Designing	1	0	Textile Engineering 58 Designing	1	0
			Textile Engineering 60 Mill Management	2	0
	14	16		13	16

L.—TWO-YEAR COURSE IN TELEPHONY.

FIRST YEAR.

Drawing 11 Mechanical	0	3	Drawing 12 Mechanical	0	3
Drawing 13 Freehand	0	1	Drawing 14 Freehand	0	1
English 11 Grammar, Composition	3	0	English 12 Grammar, Composition	3	0
Electrical Engineering 21 Electricity and Magnetism	3	4	Electrical Engineering 22 Direct Currents	3	4
Mathematics 13 Shop Mathematics	4	0	Mathematics 14 Shop Mathematics	3	0
Mechanical Engineering 23 Carpentry	0	4	Military Science 12	1	2
Military Science 11	1	2	Electrical Engineering 26 Telephone Plants	2	0
Physics 11 Elementary	3	4	Physics 12 Elementary	3	4
	14	18		15	16

SECOND YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
English 51 Practical Composition	3	0	English 52 Practical Composition	3	0
Electrical Engineering 55 Alternating Currents	3	0	Electrical Engineering 58 Electrical Machinery	6	0
Electrical Engineering 57 Wiring and Illumination	3	0	Electrical Engineering 62 Electrical Laboratory	0	8
Electrical Engineering 61 Electrical Laboratory	0	8	Electrical Engineering 64 Business Forms	1	0
Electrical Engineering 59 Telephony	3	0	Electrical Engineering 68 Telephone Plant Design	0	4
Electrical Engineering 63 Telephone Testing	0	6	Electrical Engineering 60 Telephony	3	2
Military Science 51	1	2	Military Science 52	1	2
	13	16		14	16

XIII.—COURSE IN VETERINARY MEDICINE.

For the session 1917-18, only the Freshman and Sophomore years of this Course will be taught. The announcement of the subjects for the Junior and Senior years is tentative only. A more detailed announcement will be published in the next catalogue.

FRESHMAN YEAR.

Anatomy 111	2	6	Anatomy 112	2	4
Biology 101 Botany	3	2	Biology 102 Botany	3	2
Chemistry 101 Inorganic	3	2	Chemistry 102 Inorganic	3	2
English 103 Rhetoric and Composition.	3	0	English 104 Rhetoric and Composition.	3	0
Military Science 101	1	2	Military Science 102	1	2
Physics 101 Principles of Physics	2	2	Physics 102 Principles of Physics	2	2
Phys. and Pharmacology 121 Physiology.	3	2	Phys. and Pharmacology 122 Physiology	3	2
	17	16		17	14

SOPHOMORE YEAR.

Anatomy 201	3	6	Anatomy 202 Histology and Embryology	3	4
Biology 201 Zoology	2	2	Animal Husbandry 204 Judging	2	4
Biology 209 General Bacteriology	2	4	Biology 202 Zoology	2	2
English 203 Composition	1	0	Chemistry 206 Organic	3	2
Entomology 203 Veterinary Entomology	3	2	English 204 Composition	1	0
Military Science 201	1	2	Military Science 202	1	2
Phys. and Pharmacology 231 Inorganic Drugs	3	0	Pathology 242 General	3	2
	15	16		15	16

JUNIOR YEAR.

Bacteriology
Clinic
Dairy Husbandry
Pathology
Pharmacology
Surgery
Veterinary Medicine

Animal Husbandry
Bacteriology
Clinic
Pathology
Surgery
Veterinary Medicine

SENIOR YEAR.

Animal Nutrition
Clinic
Diseases of Small Animals
Infectious Diseases
Serum Therapy
Toxicology

Clinic
Jurisprudence
Meat Inspection
Operative Surgery
Sanitary Science
Elective

X.—COURSE IN SCIENCE.

FRESHMAN YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Biology 103 Botany	3	2	Biology 104 Botany	3	2
Chemistry 101a Inorganic	3	4	Chemistry 102a Inorganic	3	4
Drawing 119 Freehand and Mechanical	0	4	Drawing 120 Freehand and Mechanical	0	4
English 103 Composition and Rhetoric	3	0	English 104 Composition and Rhetoric	3	0
History 101 Modern Europe	3	0	History 102 Modern Europe	3	0
Military Science 101	1	2	Military Science 102	1	2
Physics 101a Principles of Physics	3	2	Physics 102a Principles of Physics	3	2
	16	14		16	14

SOPHOMORE YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Biology 203 Zoology	2	4	Biology 204 Zoology	2	4
Chemistry 201 Organic	2	4	Chemistry 202 Organic	3	4
Chemistry 209 Geology	2	2	English 202 Literature	3	0
English 201 Literature	3	0	Entomology 202 Economic	2	2
Entomology 201 Systematic	2	2	Mathematics 206 Trigonometry	3	0
Military Science 201	1	2	Military Science 202	1	2
Modern Language 213 German	3	0	Modern Language 214 German	3	0
	15	14		17	16

Required in all groups.

JUNIOR YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Agronomy 301 Soils	3	4	Biology 308 Vertebrate Anatomy	2	4
Chemistry 309 Analytical	1	4	Chemistry 302 Agricultural	2	2
Economics 303 Fundamental Principles	3	0	Economics 304 Rural Economics	3	0
English 301 Argumentation	1	0	English 302 Argumentation	1	0
*Modern Language 323	3	0	*Modern Language 324	3	0
	11	8		11	6
*Or Military Science 301	3	2	*Or Military Science 302	3	2

SENIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
*Economics 405 Credit and Marketing	3	0	*Economics 406 Rural Problems	3	0
English 401 Public Speaking	1	0	English 402 Public Speaking	1	0
	4	0		4	0
*Or Military Science 401	3	2	*Or Military Science 402	3	2

GROUP 1. BACTERIOLOGY.

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 309 General Bacteriology	2	4	Biology 310 General Bacteriology	2	4
English 311 Literature	3	0	English 312 Literature	3	0
	5	4		5	4

SENIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 403 Plant Diseases	2	4	Biology 406 Plant Diseases	2	4
Biology 407 Systematic Botany	2	4	Biology 408 Systematic Botany	2	4
Chemistry 421 Advanced Agricultural Chemistry	2	8	Chemistry 422 Advanced Agricultural Chemistry	2	8
	6	16		6	16

GROUP 2. BOTANY.

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 311 Plant Physiology	2	4	Biology 312 Plant Physiology	2	4
English 311 Literature	3	0	English 312 Literature	3	0
	5	4		5	4

SENIOR YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Biology 403 Plant Diseases	2	4	Biology 406 Plant Diseases	2	4
Biology 407 Systematic Botany	2	4	Biology 408 Systematic Botany	2	4
Chemistry 421 Advanced Agricultural Chemistry	2	8	Chemistry 422 Advanced Agricultural Chemistry	2	8
	6	16		6	16

GROUP 3. ZOOLOGY.

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 313 Animal Histology	2	4	Biology 314 Embryology	2	4
English 311 Literature	3	0	English 312 Literature	3	0
	5	4		5	4

SENIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 411 Advanced Invertebrate Zoology	2	4	Biology 412 Advanced Invertebrate Zoology	2	4
Biology 413 Advanced Vertebrate Zoology	2	4	Biology 414 Advanced Vertebrate Zoology	2	4
Chemistry 421 Advanced Agricultural Chemistry	2	8	Chemistry 422 Advanced Agricultural Chemistry	2	8
	6	16		6	16

GROUP 4. CHEMISTRY.

JUNIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 309 General Bacteriology	2	4	Biology 310 General Bacteriology	2	4
Chemistry 321 Physical Chemistry	2	4	Chemistry 322 Qual. and Quan. Analysis	1	4
	4	8		3	8

SENIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 421 Sanitary Bacteriology	2	4	Chemistry 410 Water Analysis	0	4
Chemistry 405 History of Chemistry	1	0	Chemistry 422 Advanced Agricultural Chemistry	2	8
Chemistry 421 Advanced Agricultural Chemistry	2	8	Civil Engineering 428 Sewerage and Filtration	3	4
English 421 Literature	2	0	English 422 Literature	2	0
	7	12		7	16

GROUP 5. ENTOMOLOGY.

JUNIOR YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Biology 313 Animal Histology	2	4	Biology 314 Embryology	2	4
Entomology 311 Advanced Systematic	2	2	Entomology 312 Advanced Systematic	2	2
	4	6		4	6

SENIOR YEAR.

First Term.	Th.	Pr.	Second Term.	Th.	Pr.
Biology 403 Plant Diseases	2	4	Biology 406 Plant Diseases	2	4
English 421 Literature	2	0	English 422 Literature	2	0
Entomology 403 Advanced Economic	1	4	Entomology 404 Advanced Economic	2	2
*Horticulture 401 Pomology	3	2	Entomology 406 Advanced Economic	0	2
			*Agronomy 408 Advanced Soils	2	2
	8	10		8	10
*Or Entomology 405 Fruit Insects	2	4	*Or Entomology 408 Apiculture	2	2

COURSES OF INSTRUCTION BY DEPARTMENTS.

The courses of instruction are described on the following pages under the departments in which they are offered. Courses from 101 to 199 are for Freshmen, 201 to 299 for Sophomores, 301 to 399 for Juniors, 401 to 499 for Seniors; 1 to 49 for first-year students in short Courses; 51 to 99 for second-year students in short Courses. First-term courses are given odd numbers, second-term courses, even numbers.

The figures in parenthesis following the name of a course indicate the number of hours per week, theory and practice, respectively, devoted to the course.

For convenience of reference, the departments are listed here in alphabetical order:

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DEPARTMENT OF AGRICULTURAL EDUCATION.

PROFESSOR HAYES, ASSOCIATE PROFESSOR BLACKWELL, ASSISTANT PROFESSOR BROYLES.

Under the laws of Texas, two kinds of certificates are offered to the students of this College. A First Grade State Certificate, good for four years, may be granted to any student who has completed four "full courses" (equivalent to twenty-four term hours) of Arts and Science work, and one "full course" (equivalent to six term hours) of Education. A Permanent State Certificate may be given to a graduate of the College who has completed four "full courses" (twenty-four term hours) in Education, or who has had three years of teaching experience. All courses offered by this Department are regarded by the Superintendent of Public Instruction as courses in "Education" under the meaning of the law.

301. Educational Psychology. (3-0).

This is a beginning course in psychology with special emphasis on its application to the problems of teaching. Stress will be placed upon instincts, habit formation, memory, attention, and the psychological principles of industrial subjects in the curriculum. The principles of adolescence form an interesting chapter. The text is supplemented to a great extent.

Text: The Mind and Its Education, Betts.

302. Methods. (3-0).

The fundamental principles of the aims and methods of the recitation are considered with their application to the conditions of the high school. Lesson plans and practice teaching in agriculture and other kindred subjects form an interesting and important part of the course.

Text: Methods of Teaching in High Schools, Parker.

303. School Administration. (3-0).

This course deals with the organization and management of State, county and city school systems; the qualifications, duties and relations of school boards, superintendents, principals and teachers; school finances; school architecture and equipment; school curricula; formation, enlargement and consolidation of school districts; certification of teachers, and the interpretation and application of the Texas School Law. The course is intended to give a general view of the educative systems of the State and of the nation.

Text: Administration of Public Education in the United States, Dutton & Snedden.

304. High School Problems. (*3-0*).

A study of the relation of the high school to elementary school, college and community; reorganization of curriculum with special attention to vocational subjects; equipment; discipline; daily schedules; records; and high school activities are included in this course. This is a detailed study of the administration of high schools, and is intended for those who are preparing to become teachers or principals of high schools.
Text: Principles of Secondary Education, Monroe.

401. Methods of Teaching. (*3-0*).

Same as course 302.

402. Administration of High School Agriculture. (*3-0*).

This course is a study of the specific problems that confront the teacher in carrying on the work of the Department of Agriculture in the high school. Among the topics discussed are: The selection of subject-matter suited to local conditions; agriculture in the curriculum; laboratory, field and home exercises; laboratory and library equipment; use and management of school farm; and community or extension work.
Text: Materials and Methods in High School Agriculture, Hummel.

403. Rural Education. (*3-0*).

The primary purpose of this course is to make a study of rural education in its broad sense, with a view of preparing teachers and extension workers for more efficient service in rural communities. Some of the topics discussed are: Changes in rural education and the rural home, together with the factors effecting such changes; the school as a community center; other agencies to be co-ordinated; community play and recreation; and the redirected rural school.
Text: Rural Life and Education, Cubberly.

404. Agricultural Extension and Demonstration. (*3-0*).

This course is intended to give a survey of the whole field of extension in agriculture and home economics, and to give practice that will prepare for actual field work. Among the topics discussed are: Evolution of extension in agriculture and home economics; general organization for extension; methods of extension; farm demonstration work; home demonstration work; junior agricultural clubs; extension by experts; extension by railroads and commercial companies, and the training of extension workers. Agricultural Education 301, 302, and 402 are important to give preparation for this course, but they are not prerequisites. Group 2 can be changed so as to include the above courses for those desiring to enter extension work. Lectures, assigned readings, and problems constitute the work of this course.

405. Vocational Education. (3-0).

The fundamental purpose of this course is to present the proper correlation between industry and education as exemplified by agricultural colleges, negro institutions, Indian and trade schools. Surveys of the various types of vocational schools are made with a view of observing their effect upon present day educational systems. Vocational guidance in the high school is stressed.

406. High School Problems. (3-0).

Same as course 304.

407. School Administration. (3-0).

Same as course 303.

DEPARTMENT OF AGRICULTURAL ENGINEERING.

PROFESSOR GEE, ASSISTANT PROFESSOR RHODES, MR. BERG.

301. Farm Machinery. (2-2).

The practical study of all lines of farm machinery, tilling, seeding, cultivating, harvesting and fertilizing machinery.

Laboratory practice to consist of detailed study of the construction, adjustment, calibration and operation of all lines of farm machinery. Demonstrations and tests to be made under field conditions.

302. Repair of Farm Machinery. (1-4).

The practical method of repair, up-keep, and care of all kinds of farm machinery. The design and equipment of the farm power plant and shop.

Laboratory practice consists of overhauling, repairing and painting of the College farm machinery, and the use of repair catalogues, babbit solder, simple wood and iron working tools.

Prerequisite: Agricultural Engineering 301.

303. Farm Buildings. (2-4).

The study of building materials, design and construction of farm buildings, and building location. Ventilation, lighting, heating, water supply, plumbing, sewage disposal will be studied briefly in their relation to rural conditions.

Text: Farm Buildings, Eckblaw.

Practice in the care and use of drawing instruments. Complete working drawings, with tracings and blue prints of some farm building will be made.

304. Drainage. (2-2).

A study of the principles of farm drainage with both open ditches and tile drains; the design and location of drainage systems, including silt traps, catch basins, and outlet bulkheads. The Texas drainage district law will be studied briefly.

Text: Land Drainage, Jeffery.

Practice to consist of laying out a complete drainage system with necessary profiles, maps, and cost estimates.

Prerequisite: Civil Engineering 319.

305. Dairy Machinery. (1-2).

The practical study of the operation, care and repair of gas engines, and boilers, pumps, silage handling and feed grinding machinery. Attention will also be given to pipe fitting, soldering, babbiting and belting.

Laboratory practice to consist of operating, adjusting, and repairing gas and steam engines, pipe fitting, soldering, babbiting, and operating and adjusting feed grinding machinery.

306. Farm Motors. (2-4).

The practical study of the farm gas and steam engine, use, care and repair.

Laboratory practice will consist of the operation, care and repair of different types of farm gas and steam engines. Brake horse power, and fuel economy tests will be run by the students.

307. Farm Motors. (2-4).

Same as course 306.

401. Traction Engines. (1-4).

The practical study of the care, operation, and handling of both steam and gas tractors.

Laboratory practice to consist of the practical operation of tractors, making brake and drawbar tests when operating under field conditions; fuel economy tests will also be made.

Prerequisite: Agricultural Engineering 306.

402. Automobiles and Motor Trucks. (2-4).

The study of the construction, care, repair and operation of the gasoline automobile.

Text: The Gasoline Automobile, Hobbs and Elliott.

Practice to consist of tire repair, valve grinding, care of electric equipment, and general repair of the automobile and motor truck.

Prerequisite: Agricultural Engineering 306.

403. Irrigation. (2-2).

A study of the principles of irrigation practice, source of water supply and methods of application to various crops, the measurement and duty of water. Special attention will be given to pump irrigation.

Practice to consist of reports on bulletins and important irrigation investigations, also the laying out of ditches and irrigation systems.

Text: Irrigation Practice, Widtsoe.

Prerequisite: Civil Engineering 319.

404. Experimental Agricultural Engineering. (0-6).

A course for advanced undergraduates who are especially interested in solving some agricultural engineering problem.

405. Pumps and Power Problems. (3-0).

A study of elementary hydraulics and its application to farm pumping and water supply; the use of electricity for light and power.

Text: Elements of Hydraulics, Merriman.

406. Farm Motors. (2-4).

Same as course 306.

407. Farm Motors. (2-4).

Same as course 306.

408. Terracing. (0-2).

Practice in differential and profile leveling, use of precise and homemade levels in location of terraces, adjustment of levels, construction of the broad terrace and soil saving dam. Trips will be made to terraced fields, and one or more lectures illustrated with slides will be given.

409. Farm Concrete. (1-4).

A study of the use of concrete on the farm.

Practice to consist of the design and construction of molds and forms, methods of reinforcing, and proportions of mixture to be used in various farm buildings and equipment.

Text: Concrete Construction for Rural Communities, Seston.

411. Farm Machinery. (2-2).

Same as course 301.

413. Farm Buildings. (2-4).

Same as course 303.

FOR STUDENTS IN SHORT COURSES.

13. Farm Machinery and Farm Motors. (2-2).

This course gives the student a practical knowledge of the machinery and motors that are in use on modern farms.

Recitations and problems.

Text: Agricultural Engineering, Davidson.

The student will study in detail the construction, operation and adjustment of modern farm machinery and farm motors. Demonstrations and tests will be made under field conditions.

15. *Irrigation and Drainage.* (*1-4*).

A study of the principles of drainage and irrigation and the methods of handling drainage and irrigation water.

Text: Agricultural Engineering, Davidson.

Practice in the use of surveying instruments in farm surveying and in laying out drainage and irrigation systems.

25. *Farm Machinery.* (*2-2*).

Same as course 301.

26. *Farm Motors.* (*2-4*).

Same as course 306.

27. *Farm Concrete.* (*1-4*).

Same as course 409, except that more time will be spent in mixing and placing concrete.

53. *Farm Machinery and Farm Motors.* (*2-2*).

Same as course 13.

55. *Irrigation and Drainage.* (*1-4*).

Same as course 15.

56. *Repairing Farm Machinery.* (*1-4*).

Same as course 302.

57. *Farm Buildings.* (*2-4*).

Same as course 303.

58. *Automobiles.* (*2-4*).

Same as course 402.

59. *Tractors.* (*1-4*).

Same as course 401.

60. *Advanced Testing.* (*0-4*).

In this course the student will have an opportunity to run complete brake horse power, drawbar horse power and fuel economy tests on different engines. For students who plan to enter the implement and farm equipment business, special lectures and exercises in bookkeeping and advertising will be given.

61. Farm Concrete. (1-4).

Same as course 409.

66. Farm Motors. (2-4).

Same as course 306.

DEPARTMENT OF AGRONOMY.

PROFESSOR MORGAN, ASSOCIATE PROFESSORS McMILLAN, WOOD, MR. YOUNG, MR. REYNOLDS.

Agronomy comprises the theory and practice of the production of field crops. In this department instruction is given in those subjects which relate especially to the field and its affairs, such as soils, fertilizers and manures, farm crops, seed selection, farm management and plant breeding, crop ecology, etc.

101. Elementary Crop Production. (2-2).

This course gives the student an elementary knowledge of the best practices involved in the production of field crops, including seed selection, the preparation of the seed bed, cultivation, etc. Crop rotation and its value is discussed in an elementary way.

Text: Field Crop Production, Livingston.

The practice work in this course comprises an elementary study of the different farm crops, both in the laboratory and field, noting particularly those points that constitute ideal seed plants. When opportunity permits, the improved practices involved in crop production will be studied in the field.

301. Soils. (3-4).

This course gives the student a rather comprehensive knowledge of the soil and its management. It is given according to the following outline:

(a) The soil as a medium for root development, including a study of rock and its products; the soil mass, together with the physical properties of the soil and their modification; the organic content of the soil.

(b) The soil as a reservoir for water, including the functions of water in plant growth; the amount of water in the soil; the movement of soil water, and the control of soil water.

(c) Plant nutrients in the soil, including a careful study of both micro-organisms and macro-organisms, as they influence soid productiveness.

(d) The soil air; composition and functions of.

(e) Heat of the soil; comprising a study of the sources, functions and means of modifying soil temperature.

(f) External factors in soil management; tillage, crop adaptation, etc.

Text: Soils, Lyon and Fippin.

In the laboratory the student applies the principles learned in the class room to the actual management of soils.

Prerequisite: Chemistry 101, 102; Physics 101, 102.

302. Farm Crops. (4-2).

In this course, all the leading field crops are studied with regard to structure, composition, races and varieties, breeding or improvement, soils, rotations, fertilizers, together with tillage operations, harvesting and marketing.

Text: Field Crops for the Cotton Belt, Morgan; Forage Plants and Their Culture, Piper.

In the laboratory the student makes a careful study of the leading characteristics of the different crops; seeds are studied as regards purity, and other points that determine value.

Prerequisite: Agronomy 301; Biology 301, 302.

304. Soil Mapping. (1-4).

In this course special consideration is given to the methods employed in classifying soils, and the benefits derived from soil survey work.

In practice the students make a field study of the various soil types found in the surrounding locality. This area is surveyed and mapped according to the methods employed by the Bureau of Soils of the United States Department of Agriculture. In this work the student is taught the use of the plane table and map making.

Prerequisite: Agronomy 301.

401. Plant Breeding. (3-2).

A course dealing with the improvement of field crops. The relative merits and demerits of the various methods applicable to the improvement of our common field crops are considered in detail, such as selecting fluctuating variations, the selection of mutations, the isolation of elementary species and the use of hybridization. The influence of environmental factors on the improvement of crops is also discussed.

Students will study the different forms of variation, using plants growing in the greenhouse or that have been selected and mounted for laboratory work. As far as possible practice work will be given in making field selections relative to plant improvement. Some practice in hybridizing field crops will be given.

Prerequisite: Agronomy 302.

402. Farm Management. (3-4).

The application of all the principles taught in the various agricultural subjects to the business management of the farm. Farm problems and farm bookkeeping are featured. Different systems of farming are studied with reference to the equipment in land, labor, and capital for each, also crop rotations best suited to the different systems.

Text: Farm Management; Warren.

Practice work comprises a field study of available farms, planning and outlining systems of management best adapted to each. Attention is given to the general layout of farm, size and shape of fields, condition of buildings, ditches, roadways, etc., and the necessary improvements are suggested.

Prerequisite: Agronomy 301, 302; Dairy Husbandry 102; Horticulture 201, 202.

403. Cost Accounting. (2-2).

In this course special attention is given to the study of farm inventories, work reports, farm records and methods of keeping farm cost accounts.

Practice work will include the analysis of farm inventories, the preparation of work reports, keeping cost accounts with single crop and stock enterprises, and the preparation and analysis of at least two complete sets of farm accounts.

404. Marketing Problems. (3-2).

The aim of this course is to familiarize the student with important problems pertaining to the marketing of farm products that may be controlled by the individual, rather than the more general economic aspects of the subject of marketing. Distinctly technical phases of the subject such as pertain to grading, packing, and storing are featured.

Practical applications of the principles developed in the class room are worked out in the laboratory. In connection with the practice a study of marketing conditions actually prevailing at some important market center of the State will be made, providing such can be arranged. Students electing the course should plan for this trip.

405. The Use of Fertilizers and Manures. (2-2).

A thorough course dealing with soil requirements as regards fertilizers; methods of determining the fertilizer needs of soils; correct fertilizer practices with reference to the important field crops; lime and its use on the farm; the care, management and use of barnyard manure, and the use of green manure in soil improvement.

The fertilizer requirements of various soils for a number of crops will be determined by pot tests. The secondary effects of fertilizers and manures on soils will be studied in the laboratory. When opportunity permits, field excursions will be taken for the purpose of observing farm practices with fertilizers and manures.

Prerequisite: Agronomy 301, 302.

406. Advanced Farm Management. (1-4).

Advanced study of regions, types and methods of farming; discussions of efficiency factors and specific problems on the farms visited in practice.

Field trips to farms in various regions. Complete data will be collected from which a detailed study of the efficiency of the farm business will be made. At least two all-day trips will be provided for.

Must be accompanied by Agronomy 402.

408. Advanced Soils. (2-2).

This course is intended for the student who wishes to make a specialty of soil study. It deals especially with systems of soil management with reference to permanent soil productiveness. Recent literature bearing on the subject is discussed and the results of some of the leading soil investigations studied.

In the soils laboratory special fertility problems will be studied

Prerequisite: Agronomy 301.

FOR STUDENTS IN SHORT COURSES.

28. Soils. (3-2).

A study of the origin, structure, texture and crop adaptations of agricultural soils. Soil fertility and its maintenance; manures, fertilizers, cover crops, fallowing, fall and spring plowing, crop rotations, diversification and the renovation of worn-out soils will receive attention in their proper order. This course is designed to meet the more practical needs of the two-year student.

Recitations and lectures.

Text: Soils, Fletcher.

Laboratory and field studies on the water-holding capacity of soils, capillarity, the influence of organic matter on the physical properties, lime and its effects, etc.

51. Crop Production. (3-2).

This course will include a rather thorough treatment of all the principal Southern field crops, giving special attention to methods of breeding, preparation of the seed bed, cultivating, harvesting and storing.

Text: Southern Field Crops, Duggar.

A laboratory and field study of the various field crops, noting particularly those points that constitute ideal seed plants. When opportunity permits, the improved practices involved in crop production will be studied in the field.

52. Farm Equipment and Management. (3-2).

A comprehensive study of the farm from an economic and business standpoint. Such topics as the planning and organizing of the farm with respect to available resources; farm labor; wages; rents and lease systems; contracts; farm accounts; farm advertising and salesmanship; efficiency; and the principal rural problems will be studied.

Text: Farm Management, Boss.

Students will be required to work out a problem consisting of the planning, equipping and managing of a given farm on an ideal plan for a period of several years. Excursions to representative farms, and agricultural surveys will be undertaken as opportunity may permit.

DEPARTMENT OF ANIMAL HUSBANDRY.

PROFESSOR BURNS, ASSOCIATE PROFESSORS BELL, BURK, ASSISTANT PROFESSORS MAGEE, CONWAY, MR. STANGEL.

The courses in the Department of Animal Husbandry may be grouped under the four main heads:

(1) The Judging of Live Stock.
(2) The Breeding of Live Stock.
(3) The Feeding of Live Stock.
(4) The Management of Live Stock.

The courses are as follows:

101. Judging Market Types of Cattle and Sheep. (0-4).

The lectures are explanatory of the various classes and grades of cattle and sheep recognized in the leading stock markets. The points of these and their value to the stockman, the butcher and the consumer are fully discussed. The practice embraces a thorough training in the scoring of fat cattle and fat sheep; supplemented by the study of dressed carcasses as far as possible. In this course lectures are also given on the type and function of the dairy cow and thorough training is given in the scoring of dairy cattle. Comparative judging constitutes an important part of the work.

Text: Types and Market Classes of Live Stock, Vaughan.

102. Judging Market Types of Horses and Swine. (0-4).

The classes and grades of horses and swine recognized in the leading markets are discussed fully. The distinction of classes, and their importance, is made clear by the further use of the score card. Comparative judging is also an important feature in this course.

201. Farm Poultry. (2-2).

This is a general course on Farm Poultry and treats of the breeds and types of poultry; the principles of breeding and mating of fowls; incubation and brooding; feeding for growth and egg production; winter and summer management; housing and hygiene; sanitation; disease; parasites and their treatment; preparing poultry for market, marketing. It deals with the practical application of these principles to general farm conditions.

Text: Poultry Production, Lippincott.

The practice work consists of the study of breeds and types, incubators and brooders, housing, judging of fancy and utility poultry, candling and grading of eggs and poultry products, killing and dressing poultry.

202. Judging Breed Types of Horses, Cattle, Sheep and Swine. (2-2).

The lectures in this course treat of the origin, history, characteristics and adaptability of the various breeds of live stock. As far as the equipment in live stock will permit, the student is shown by means of representative animals the best type of the breeds of horses, cattle, sheep and swine.

Text: Types and Breeds of Farm Animals, Plumb.

The score cards of the different breed associations are used in determining the merits of the animals, and these are further explained in the lectures. An important part of the practice consists of comparative judging similar to that of the show ring.

Prerequisite: Animal Husbandry 101, 102.

301. History and Development of Breeds. (2-2).

A study of the origin, improvement, adaptability, and characteristics of the important breeds of horses, cattle, sheep and swine. The foundation of the breeds, their subsequent development, and the special breed features and qualities are given full consideration, with the view of acquainting the student with the conditions for which each breed is suited. The text is supplemented by assigned readings.

Text: The Breeds of Live Stock, Gay.

Practice consists of judging representatives of the various breeds, applying the official standards as adopted by the breed associations.

Prerequisite: Animal Husbandry 202.

302. Animal Breeding. (2-2).

A study of the principles of animal improvement which form the basis of proper selection and mating for the production of pure bred live stock and market animals. The course includes a discussion of the subjects of reproduction, variation, heredity, selection, and the various methods of breeding, which include line breeding, inbreeding, crossing, grading, and other subjects connected with the breeding and improvement of farm animals.

Text: Breeding Farm Animals, Marshall.

Practice consists largely of a study of the results obtained with the various breeds comprising the College herds. Training is given in the use of herd books, which involves the tabulation of pedigrees of representatives of the different breeds.

Prerequisite: Animal Husbandry 301; Biology 301.

401. *Animal Nutrition.* (*3-2*).

This subject involves a study of the fundamental principles of live stock feeding, including the composition and digestibility of feeding stuffs, the disposition made of the different feed constituents by the animal organism, and, finally, the methods of calculating rations for the various classes of farm animals,—horses, cattle, sheep, and swine. Students are required to use a text-book and that is supplemented by lectures.

Text: Feeds and Feeding, Henry.

The practice consists chiefly in calculating rations and in working out problems relating to the economic side of live stock feeding.

Prerequisite: Chemistry 201.

402. *Live Stock Feeding.* (*3-2*).

This course treats of the practical application of the principles taught under the subject of animal nutrition. It embraces a thorough study of horse, mule, cattle, sheep, and swine feeding investigations, and of the practical feeding operations of the most successful stockmen with special reference to Texas conditions. Lectures supplement the text in the presentation of the course.

Text: Feeds and Feeding, Henry.

In the practice, students are required to keep in close touch with all feeding tests that the Experiment Station has in progress, to make abstracts of Experiment Station bulletins relating to live stock feeding tests of this and other stations, and to gain experience in compounding rations for various purposes from limited selections of feeding stuffs.

Prerequisite: Animal Husbandry 401.

403. *Advanced Judging.* (*1-4*).

The lectures of this course treat further of the most approved types of pure-bred animals and of those used for the common market.

Classes of the different kinds of live stock are selected as similar as possible to those which come together in the show rings of exhibitions and the work of competitive judging among the students is given much prominence

Prerequisite: Animal Husbandry 302.

404. *Live Stock Management.* (*2-2*).

The raising of horses, cattle, sheep, and swine, as a business, is discussed in full detail, covering all features of management in production and marketing. The management of stock farms and ranches is fully treated. A study is made of the methods used by some of the most successful stock farmers and ranchers of Texas and other States. Special attention is given to the management of pure-bred herds and flocks and to the keeping of private herd and flock records.

The practice in live stock management consists of actual work in preparing different classes of stock for show and sale. The student is given instruction in trimming sheep, washing and curling the coats of cattle and polishing horns and hoofs. The work on horses consists of grooming, fitting of harness, and decorating manes and tails.

Prerequisite: Animal Husbandry 302; must be accompanied by Animal Husbandry 402.

405. Herd Book Study. (0-4).

The first part of the work consists of training in the intelligent use of herd books, involving practice in the tabulation and study of pedigrees of famous animals. This is followed by a study of the blood lines of the breed or breeds of live stock which the student intends to produce, in order to familiarize him with the best strains and individuals of the breed. Practice is also given in the necessary incidentals connected with the registration of animals, such as the rules of entry, application for transfer, etc.

Prerequisite: Animal Husbandry 302.

407. Poultry Feeding and Management. (2-2).

This course is an application of the principles involved in the management and feeding of fowls for egg production and for fattening. Problems of interest to individual members of the class will receive attention.

Practice will include the management of a pen of chickens by each student for four weeks, keeping detailed records of cost of feed, production, and all operations connected with the work.

Prerequisite: Animal Husbandry 201.

408. Incubation and Brooding. (2-2).

This course consists of the care of an incubator by each student through the incubator period. A careful study of incubation and brooding will be made, also a detailed study of the literature on the subject. Problems of interest to the individual members of the class will also receive attention.

Practice will include the management of an incubator by each student for four weeks, testing the eggs, bringing off the hatch, and keeping careful records of all cost, temperature, fertility of eggs, and the like.

Prerequisite: Animal Husbandry 201.

FOR STUDENTS IN SHORT COURSES.

21. *Judging Market Types of Horses, Cattle, Sheep and Swine.* (0-6).

In this course students are given thorough training in scoring and judging market types of horses, cattle, sheep and swine. The points of these and their value to the stockman, the butcher, and the consumer are fully discussed. A study of dressed carcasses is made.

Text: Types and Market Classes of Live Stock, Vaughan.

22. *Judging Breed Types of Horses, Cattle, Sheep and Swine.* (2-2).

A modification of Animal Husbandry 202.

Text: Types and Breeds of Farm Animals, Plumb.

Prerequisite: Animal Husbandry 21.

52. *The Breeding of Live Stock and the Study of Pedigrees.* (2-2).

The lectures in this course treat of the principles of breeding and the methods used in the practice of breeding horses, cattle, sheep and swine,—pure-bred animals, as well as those for the common market.

Text: Breeding Farm Animals, Marshall.

The practice consists principally of the study of pedigrees. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite: Animal Husbandry 22.

54. *Farm Poultry.* (3-2).

A somewhat broader course than Animal Husbandry 104, dealing with the practical application of the principles of poultry husbandry to general farm conditions.

Text: Poultry Production, Lippincott.

The practice is practically the same as in course 201.

55. *Live Stock Feeding.* (2-2).

This course embraces a study of the feeding of all classes of farm animals, horses, cattle, sheep and swine. The subject of animal nutrition, the composition of available feeding stuffs and the calculating of rations, are treated fully.

Text: Productive Feeding of Farm Animals, Woll.

The practice consists largely of calculating rations for different classes of farm animals, special attention being given to the study of Texas grown feeding stuffs.

DEPARTMENT OF ARCHITECTURE AND ARCHITECTURAL ENGINEERING.

PROFESSOR ADLESPERGER, ASSISTANT PROFESSOR DYSLAND.

101, 102. Elements. (0-9).

The correlation of plans, elevations and sections; lettering; mouldings, the orders, architectural elements; conventional rendering; required, 16 plates in line; 6 in wash.

Quizzes, tracings, short themes, lectures.

Text: American Vignola, Vols. I and II, Ware.

201, 202. Design. (0-12).

Tracings and order problems of varying complexity and elementary design problems.

Required work, 7 majors, 14 minors; required points, 28.*

Prerequisite: Architecture 101, 102.

205, 206. Carpentry. (2-0, 3-0).

Woods, lumber, woodworking, framing, finishing, interior details. Hardware, paint and varnish. Roofings.

Daily quarter-hour written quizzes; tracings; lectures.

Texts: Building Construction, Part 2, Kidder; Paint and Varnish Catechisms, Heckel.

207, 208. History of Architecture. (2-0).

Egyptian, Western Asiatic, Greek, Roman, Early Christian, Byzantine, Romanesque and Gothic styles.

Daily quarter-hour written quizzes; tracings; research; lectures.

Text: A History of Architecture, Fletcher-Fletcher.

216. Theory of Design. (1-0).

The underlying principles of pleasing composition.

Daily quarter-hour quizzes; research; lectures.

Text: Architectural Composition, Robinson.

301, 302. Design. (0-15).

Tracings, working drawings, sketches, archaeology and design problems of increasing difficulty.

Required work, 5 majors, 12 minors; required points, 22.

Prerequisite: Architecture 201, 202.

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*A problem will be graded as a Pass, Mention or First Mention, counting, respectively, 3, 4 or 5 for Majors and $\frac{1}{2}$, $\frac{3}{4}$ or 1 for Minors; but not more than 4 points will be credited for Minors in any one year.

303, 304. Structural Design. (0-12).

Tracings, sketches, working drawings, mill construction, mill and factory design.

Required work, 5 majors, 12 minors; required points, 22.

Prerequisite: Architecture 201, 202.

305. Masonry. (3-0).

Materials and methods of construction in brick, stone and concrete; foundations; plastering.

Daily quarter-hour written quizzes, tracings, sketches, experiments; lectures.

Text: Building Construction, Part I, Kidder.

306. Steel Construction. (2-0).

Skeleton framing in steel, designing of sections, fire-proofing.

Daily quarter-hour written quizzes, tracings, problems; lectures.

Texts: Building Construction, Part I, Kidder; Pocket Companion, Carnegie Steel Co.

Prerequisite: Architecture 305.

307. Plumbing. (2-0).

Water supply, sewage disposal, plumbing, housing, conditions.

Daily quarter-hour written quizzes, tracings, lectures.

Text: Principles and Practices of Plumbing, Cosgrove.

308. Heating and Ventilation. (2-0).

Direct and indirect methods of heating by steam and hot water. Furnace heating. Plenum and vacuum fans.

Daily quarter-hour written quizzes, tracings, problems; lectures.

Text: Power, Heating and Ventilation, Part II, Hubbard.

309. History of Architecture. (2-0).

Renaissance, Indian, Chinese, Japanese and Saracenic styles. Modern architecture.

Daily quarter-hour written quizzes, tracings, research; lectures.

Text: A History of Architecture, Fletcher-Fletcher.

Prerequisite: Architecture 207, 208.

310. Historic Ornament. (2-0).

Ornament and its applications to objects of art and in architecture.

Daily quarter-hour written quizzes, tracings, color sketches, research; lectures.

Text: A History of Ornament, Hamlin.

Prerequisite: Architecture 309.

401, 402. Design. (*0-15, 0-18*).

Advanced archaeology and design problems, municipal planning and monumental design.

Required work, 5 majors and 10 minors; required points, 22.

Prerequisite: Architecture 301, 302.

403, 404. Structural Design. (*0-15*).

Industrial developments in steel and reinforced concrete; skeleton construction, foundations.

Required work, 5 majors and 10 minors; required points, 22.

Prerequisite: Architecture 303, 304.

NOTE.—With the approval of the Head of the Department, students in courses 402 and 404 may collaborate on the "double-major" problem at end of term.

405. History of Sculpture. (*1-0*).

Ancient and modern sculpture, especially as a coherent element of architectural composition.

Daily quarter-hour written quizzes, tracings, sketches; lectures.

Text: History of Sculpture, Marquand and Frothingham.

406. History of Painting. (*2-0*).

Modern painting and mural decoration.

Daily quarter-hour written quizzes, color sketches; lectures.

Text: A History of Painting, Van Dyke.

408. Business Practice. (*2-0*).

Office management. Specifications. Contracts. Ethical conduct.

Daily quarter-hour written quizzes; lectures.

Text: The Law of Contracts, Wait; Documents of the American Institute of Architects.

409. Fire Prevention Engineering. (*2-0*)

Insurance surveys, remedial construction, fire and life hazards and preventive measures.

Daily quarter-hour written quizzes, problems; lectures.

Texts: Documents of the National Fire Prevention Association.

Prerequisite: All construction courses scheduled in Sophomore and Junior years.

410. Building Codes. (*2-0*).

Organization of Building Commissioners' offices, duties of inspectors, comparison of codes.

Daily quarter-hour written quizzes, inspection; lectures.

Text: The Underwriters' Code, Woolson.

Prerequisite: Architecture 409.

419. Theory of Design. (*1-0*).

Same as course 210.

DEPARTMENT OF BIOLOGY.

PROFESSOR BALL, ASSISTANT PROFESSORS HAYDEN, CASSIDAY, FARR,
MR. REED, MR. CAMPBELL.

BOTANY.

101, 102. Economic Botany. (3-2).

The morphology and systematic relations of plants are studied in this course, which begins with an outline of the external and internal form and structure necessary to the more extended work in the physiology of the plant. The second term is devoted to systematic and ecologic botany in which the student is trained to identify plants, using as a basis his knowledge of their structure, and to apply both structure and function in accounting for their life relationships. Especial attention is given to plants of economic importance.

The laboratory work is planned to illustrate the lectures, but more especially to train the student to acquire facts of structure and function by direct observation. Each student is required to keep a note-book in which he records by drawings and notes the results of his work.

Text: Nature and Development of Plants, Curtis.

103, 104. General Botany. (3-2).

This course is designed to give a broader and deeper insight into the structure and physiology of the plant than the preceding. The first term will be devoted largely to physiology, the second to morphology and taxonomy.

Laboratory work, first term, experimental plant physiology; second term, plant structure. In both terms a note-book containing accurate recording of observations is required.

Text: A Text-book of Botany, Coulter, Barnes & Cowles.

303. Plant Physiology. (2-4).

An advanced course in physiology is here offered in which the functions of respiration, assimilation and nutrition receive especial attention. The course is designed for those who wish to pursue work of higher character in the field of general agricultural botany and at the same time to give, in the practical work, an introduction to the methods of research.

Text: Vegetable Physiology, Green.

Laboratory manual, Practical Physiology of Plants, Darwin & Acton.

Prerequisite: Biology 101, 102.

304. Plant Ecology. (2-4).

In this course plants are studied in their relation to environment. Especial attention will be placed upon the more important stimuli of temperature, moisture, and light, and upon the method in which the plant adapts itself to meet changed conditions in each of these.

Practice will consist of laboratory and field studies of the growing plant and of its relation to environment.

Text: Plant Physiology and Ecology, Clements.

Prerequisite, Biology 303.

311, 312. Plant Physiology. (2-4).

The course of study deals with the life processes of plants; their physiological relations to soil and atmosphere; the functions and interrelations of the various plant tissues; the sources, manufacture, storage and utilization of food materials. The course is fundamental to a scientific handling of plants.

Practice and theory are parallel. Primary importance is accorded to practice.

Text: Physiology of Plants, McDougal.

403, 404. Plant Diseases. (2-4).

The structure, physiology and classification of fungi are studied in the first term; in the second, types of the most important plant diseases occurring in the State are selected for study and the student is trained to identify the cause of the trouble and is shown the methods of spraying and of other corrective measures. Plant diseases due to other causes receive attention within the limits of time and material.

In the laboratory, in the first term the student will study the form and structure of selected fungi, and will learn the routine methods of cultivation and identification. In the second term, diseased plants are placed before him, and he is instructed in the diagnosis of each disease, with its appropriate treatment.

Text: Fungus Diseases of Plants, Duggar.

Prerequisite: Biology 101.

405. Plant Nutrition. (2-4).

Plant processes and products are studied with respect to their physical and chemical relationships. The course is designed as an introduction to research work.

Reference books: Principles of General Physiology, Bayliss; Physical Chemistry, Philip; Chemistry of Plants, Haas and Hill.

Text: To be assigned.

Prerequisite: Biology 303, 304.

407, 408. Systematic Botany. (2-4).

This course is designed to give the student such thorough training in the systematic relationships of flowering plants as to enable him to determine by sight the family and generic groups so that with little further application species may be determined. Special attention will be given to a comparative study of the structures upon which modern systematic botany is based. From the beginning emphasis will be placed upon physiographical ecology.

In the field the student will collect material and make notes on ecological conditions. In the laboratory, he will be trained in methods of taxonomy.

Reference books: New Manual, 7th edition, Gray; Flora of the Southern States, Chapman; Illustrated Flora of the Northern States and Canada, Britton and Brown.

ZOOLOGY.

201, 202. General Zoology. (2-2).

This course, which is for agricultural students, offers a general survey of the animal kingdom, with especial emphasis upon the forms of economic importance. The structure and physiology of types from the various groups will be considered, together with the principles of classification. Some attention will also be given to the development and distribution of animals. Careful dissection and study of type forms, with notes and drawings, will be made in the laboratory.

Text: College Zoology, Hegner.

203, 204. General Zoology. (2-4).

This course, during the first term, deals with the invetebrate animals, excepting the insects; during the second term, it deals with the vertebrates. In itself it offers a comprehensive survey of the animal kingdom; and at the same time it provides a foundation for the advanced zoological work of the Junior and Senior years.

Text: Introduction to Zoology, Hegner.

301. Embryology of the Domestic Animals. (1-4).

This course begins with a study of cell division and of the origin of the spermatozoon and of the egg-cell. The process of fertilization is then taken up, followed by a study of the development of the embryo of the bird and of the mammal.

Text: Introduction to Vertebrate Embryology, Reese.

Practice in this course consists of a study of the cell, with especial relation to the phenomena of division and maturation; of the egg of the chicken in its course of development, and of the development of the pig embryo.

Manual, Laboratory Outlines for Embryology, Harman.

Prerequisite: Biology 201, 202.

308. Comparative Anatomy. (2-4).

In this course the student will be given the opportunity of comparing the structure of the various groups of vertebrates by means of extensive dissections of type forms.

Text: To be assigned.
Prerequisite: Biology 201, 202.

313. Animal Histology. (2-4).

A term course in the microscopic anatomy of animal tissues. A careful study will be made of the cell and its structure, and of the various tissues which make up the animal body. Practice will include training in the technique of zoological laboratory methods.

Text: To be assigned.
Prerequisite: Biology 201, 202.

314. Embryology. (2-4).

This course differs from Biology 301, in that it goes more deeply into the subject, takes up the problems of heredity, and deals with the comparative development of the various classes of vertebrates.

The student will prepare all material for himself, thus gaining familiarity with embryological technique.

Text: To be assigned.
Prerequisite: Biology 313.

411, 412. Advanced Invertebrate Zoology. (2-4).

This course will be adapted to the particular needs of the student electing it. As a rule, it will include a detailed study of the three great groups of parasitic animals: Protozoa, parasitic worms, and Arthropoda (other than insects). Especial emphasis will be laid on the life-history of the forms studied, and thus on their control and prevention.

The student will be required to work out the life-history of at least one animal of economic importance.

Text: To be assigned.
Prerequisite: Biology 201, 202.

413, 414. Advanced Vertebrate Zoology. (2-4).

This course, like the preceding, will vary slightly with the needs of those electing it. Normally it will be a study of the comparative anatomy of the vertebrates.

Text: To be assigned.
Prerequisite: Biology 201, 202.

BACTERIOLOGY.

209. Introductory Bacteriology. (2-4).

Same as course 309.

302. Rural Sanitation. (2-4).

This course presents an outline of the relation of bacteria to everyday life, at home and on the farm. The rationale of sanitation in and about the home; the construction and operation of sewage disposal plants suitable for use in villages and in the country; the relations of bacteria, insects and vermin to the health of man and animals are carefully considered.

Text: Rural Hygiene, Brewer.

Laboratory study of bacteria and of their activities; methods of disinfection, etc.

306. General Bacteriology. (2-4).

This course is designed as an introduction to a more extended study of the nature and relations of bacteriology.

Preparation of culture media; of pure cultures, staining and microscopical technique; methods of identification, etc.

Laboratory Manual: Laboratory Methods for Beginners in Bacteriology, Moore.

Text: General Bacteriology, Frost and McCampbell.

309, 310. General Bacteriology. (2-4).

In this course, the general nature and relations of bacteria are considered in the first term, as exhibited by the study of selected types. In the second, the relations of bacteria to agricultural pursuits, in soil-building, dairy processes, various fermentations, etc., are examined.

Preparation of culture media; of pure cultures; staining and microscopical technique; methods of identification, etc., occupy the time allotted in the first term. In the second, the student will make analyses of water, milk, sewage, etc.

Laboratory Manual: Laboratory Bacteriology, Frost.

Text: General Bacteriology, Jordan.

322. Sanitary Bacteriology. (2-4).

The relations of bacteria and similar organisms to water and water supply are considered, with especial reference to the public health.

Preparation of special culture media; qualitative and quantitative analyses of water.

Text: Elements of Water Bacteriology, Prescott and Winslow.

401. Advanced Bacteriology. (2-4).

This course is designed for students who elect special work in bacteriology and will be adapted to the needs of the groups making the selection.

Prerequisite: Biology 306, or 309, 310.

Text: To be assigned.

402. Soil Bacteriology. (2-4).

In this course the relation of bacteria to soil-building, nitrogen fixation and release; and similar activities receive attention.

Preparation of special culture media; study of ammonification; nitrification, denitrification, etc.

Manual, A Manual of Bacteriology, Reed.

Text: Agricultural Bacteriology, John Percival.

Prerequisite: Biology 306, or 309, 310.

416. Rural Sanitation. (*2-4*).

Same as course 302.

421. Sanitary Water Analysis. (*2-4*).

The bacteriology of sewage; sewage management and disposal; sanitary appliances, public and private, are thoroughly considered.

Text: Sewage Disposal, Kinnicutt-Winslow and Pratt.

FOR STUDENTS IN SHORT COURSES.

11. Economic Zoology. (*3-2*).

A study of the familiar forms of animal life, with especial reference to those directly related to agriculture.

Text: Practical Zoology, Hegner.

The laboratory work consists of the dissection of a few familiar forms, together with observations of their physiology and mode of life.

Manual: Laboratory and Field Zoology, Hegner.

12. Economic Botany. (*3-2*).

Students in this course are offered work designed to present a clear outline of the fundamental facts of plant life upon which the intelligent handling and care of farm crops are based. The term opens with a study of the plant as a whole and this leads to the systematic and ecologic relationships especially of those used as cultivated crops.

The student is required to work out for himself and to make notes upon the structure of the plant and to use this knowledge in the systematic study of selected plants.

Text: Elementary Studies in Botany, Coulter.

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

PROFESSOR HEDGES, ASSOCIATE PROFESSORS GORDON, RAY, ASSISTANT PROFESSORS BROWN, BRAYTON, MR. OVERSTREET, MR. BRYANT, MR. MAGNUSON.

Most of the work in this department is given by lectures, illustrated by experiments, and supplemented by laboratory work, with frequent oral and written quizzes. A broad foundation is laid in the beginning course in General Inorganic Chemistry, which extends through the Freshman year in all four-year courses.

CHEMISTRY.

The courses in Chemistry are as follows:

101, 102. General Inorganic Chemistry. (*3-2*).

In this course the foundation principles of all chemical activity are fully discussed and demonstrated. The chemical elements and their compounds are then taken up separately and systematically. Industrial applications of the more important chemical processes are briefly described, and organic chemistry is touched upon. This course must precede all other chemical studies. An elementary course in physics should precede or accompany this course.

Text: A Course in General Chemistry, McPherson and Henderson.

General laboratory work, duplication of lecture experiments, qualitative analysis, simple tests of technical importance.

201, 202. Organic Chemistry. (*2-4, 3-4*).

The lectures and recitations serve as an introduction to the chemistry of the compounds of carbon. A study is made of the general principles, and attention is called to their application to various industrial processes.

The laboratory work serves as a basis for the course. The student here familiarizes himself with the reactions, properties and relations of typical organic compounds.

Prerequisite: Chemistry 101, 102.

205. Qualitative Analysis. (*2-8*).

This course includes both the theory and practice of fundamental analytical operations and is designed to enable the student to make a rapid and accurate analysis of substances of average complexity, and to understand the steps by which his results are obtained. In theory the principles upon which the laboratory work is based are explained and discussed, and the student's knowledge rigorously tested by oral and written exercises.

The laboratory work consists of a study of the properties and reactions of the more common basic and acidic radicals, their separation and identification from mixtures, the methods of getting solids into solution for analysis and the analysis of unknown substances. The number of substances analyzed varies with their nature and complexity.

Text: Qualitative Analysis, Dennis.

Prerequisite: Chemistry 101, 102.

206. Organic Chemistry. (*3-2*).

The subject is treated primarily as a pure science. An effort is made to select for illustrations such compounds as are of interest to the student of agriculture.

Text: Organic Chemistry, Moore.

In the laboratory a study is made of the properties and typical reactions of the compounds discussed in the lectures.

207. Quantitative Analysis. (*1-4*).

This course is designed to meet the requirements of civil, mechanical and textile engineering students, and is preparatory to advanced courses in those departments. The laboratory exercises are explained in detail, general deductions drawn, and the student's knowledge of the subject tested by short oral and written exercises. A considerable portion of the class-room time is devoted to chemical calculations involved in the practice.

The laboratory work consists of a number of carefully selected experiments in quantitative analysis designed to typify operations of general application.

Prerequisite: Chemistry 101, 102.

208. Technical Analysis. (*1-3*).

This course is designed to give to students of civil and mechanical engineering, an insight into the methods employed in the analysis of materials connected with their professions, and the application of the results obtained to practical problems. The work in the laboratory is discussed and explained, and its application to engineering problems emphasized.

In the laboratory fuels, steels, cements, waters for industrial purposes, and industrial products that are commonly met with, are analyzed by rapid technical methods. The assignment varies according to the course the individual student or the class is pursuing.

Prerequisite: Chemistry 207.

209. Agricultural Geology. (*2-2*).

This course deals with the structure, composition, and other characteristics of the different classes of rocks; the general principles involved in rock-weathering; work of rivers, oceans, and dynamic agencies. Physical and structural geology.

The laboratory work will include the identification of the common rock-forming minerals and the common rocks, contour and geologic map reading, and field excursions.

Text: Physical Geology, Pirsson & Schuchert.

Prerequisite: Chemistry 101, 102.

301, 302. Organic Chemistry. (*2-4, 3-4*).

Same as course 201, 202.

304. Agricultural Chemistry. (*2-2*).

This is a study of the fundamental chemical principles of agriculture, and in addition to giving the student a grasp of the application of chemistry it helps to understand the chemical terms used in Experiment Station literature. The chemistry of plant substances, soils, irrigation water, fertilizers, insecticides, and fungicides is studied.

The laboratory work serves to familiarize the student with the composition and behavior in the laboratory of many materials important in agriculture. It consists of the chemical analysis of soils, fertilizers, insecticides and fungicides.

Prerequisite: Chemistry 309.

305. *History of Chemistry.* (*1-0*).

This course aims to trace the development of chemical knowledge from early times to the present.

Prerequisite: Chemistry 101, 102.

306. *Economic Geology.* (*3-2*).

A study of dynamic, structural, and economic geology. Special attention will be given to the economic side of the subject.

In the laboratory the work will consist of mineralogy and elementary petrology. The ores of importance will be studied in hand specimens and by means of the petrographic microscope. The instruction will be supplemented by lantern slides and occasional field trips.

Texts: Engineering Geology, Ries and Watson; Rocks and Minerals, Bayley.

Must be preceded or accompanied by Chemical Engineering 302.

307. *Quantitative Analysis.* (*1-4*).

Same as course 207.

308. *Dyeing.* (*2-2*).

This course consists of a study of the physical and chemical properties of textile fibers, dyes, dyestuffs, and mordants, together with the principles and appliances involved in the commercial coloring of textiles, especially cotton and woolen goods.

Most of the principles discussed in the theory are tested in the laboratory, with especial attention to the production of dyeing to meet particular commercial requirements.

Prerequisite: Chemistry 202.

309. *Analytical Chemistry.* (*1-4*).

This course is designed to prepare the students of agriculture for the work in agricultural chemistry. The preparation of standard solutions and the principles of quantitative analysis are discussed.

The laboratory work consists of the preparation of standard solutions, and the analysis of different materials as vinegar, limestone, and feedstuffs.

Prerequisite: Chemistry 201.

310. Water Analysis. (1-3).

This course is designed to impart a knowledge of the methods employed in the analysis of waters for industrial and potable purposes, of the interpretation of the results for such analyses, and of the methods employed in water purification. Attention is also directed to the nature and analysis of sewage, and its purification.

Prerequisite: Chemistry 307.

321. Physical Chemistry. (2-4).

This is an elementary course, emphasizing the phenomena which show the state of gaseous and dissolved substances.

Molecular weight determinations by vapor-density and freezing-point methods; heat of reaction; electrical conductivity; and electro-chemical preparations.

Prerequisite: Chemistry 201.

322. Qualitative and Quantitative Analysis. (1-4).

This course is designed to familiarize the student with the fundamental principles of qualitative analysis along with advance work in quantitative analysis. In theory the principles upon which the laboratory work is based are explained and discussed, and the student's knowledge of the subject tested by short oral and written exercises.

The laboratory work consists of qualitative analysis and a number of carefully selected experiments in quantitative analysis.

Prerequisite: Chemistry 309.

405. History of Chemistry. (1-0).

Same as course 305.

406. Engineering Geology. (3-2).

For Civil and Architectural Engineers.

This course is similar to 306, but in the latter part of the term greater emphasis is placed on building stones, paving materials, and other economic products of interest to Civil Engineers.

Text: Engineering Geology, Ries and Watson.

407. Quantitative Analysis. (1-4).

Same as course 207.

408. Quantitative Analysis. (1-3).

This course is designed to familiarize students in textile engineering with the methods employed in the analysis of size compounds, and with the properties of the various substances they contain. In the early part of this course experiments are conducted to test the purity of the substances usually incorporated in sizes, and later analyses are performed on typical sizes and the purity of the constituents determined.

Text: The Chemistry and Practice of Sizing, Percy Bean.

Prerequisite: Chemistry 407.

421. Advanced Agricultural Analysis. (*2-8*).

In this work the methods of exact analysis are discussed and the chemistry of every step explained. It supplies a basis for the work in advanced agricultural chemistry.

The official methods of analysis are used throughout the practice work; but other methods are frequently used for comparison.

Prerequisite: Chemistry 302.

422. Advanced Agricultural Chemistry. (*2-8*).

Studies are made of selected topics concerning the chemistry of soils, plants, or animal nutrition, in such a way as to give the student a knowledge of the methods used in agricultural investigation, and to aid him to develop habits of independent thought.

The student is required in this work to take up some special problem in agricultural chemistry or to work on some chemical phase of some problem simultaneously pursued in some other department.

Prerequisite: Chemistry 421.

424. Dairy Chemistry. (*2-4.*)

The object of this course is to study the composition of milk and the principal chemical changes that take place in the handling of it, and in its manufacture into butter and cheese.

The laboratory work consists in the analysis of milk, butter, oleomargarine, and cheese, and the testing for adulterants.

Prerequisite: Chemistry 302.

FOR STUDENTS IN SHORT COURSES.

22. Practical Chemistry. (*2-4*).

This course is intended to familiarize the engineering student with chemistry and its relation to every-day affairs. The elementary principles of inorganic chemistry are first considered and then topics of practical interest are taken up. Some of the topics studied: Fuels (solid, liquid, and gaseous), illuminants, air and ventilation, water purification and softening, extraction and properties of the non-ferrous metals, alloys, iron and steel, corrosion of metals, lime, cement, brick and pottery, glass, protective coatings, some carbon compounds, foods, etc.

The laboratory work comprises the preparation or testing of materials discussed in the class-room.

Text: Chemistry of Common Things, Brownlee and others.

51. *Practical.* (*3-2*).

This course is intended to familiarize the students of agriculture with the facts underlying the more important chemical processes involved in agricultural operations, such as fertility of soils, plant growth, fertilizers, and the digestibility of feeds. The elementary principles of inorganic chemistry are first considered.

Most of the principles discussed in the theory are confirmed by the student in the laboratory.

CHEMICAL ENGINEERING.

The foundation for the work in chemical engineering is laid in the courses in chemistry, already described. Chemistry and chemical engineering cover such a broad field that in the Senior year students are advised to specialize in some branch of technical analysis, such as the chemical control of a cement plant or of a cottonseed plant. All the work is supplemented by laboratory work. The chemical industries most highly developed in this State are inspected from time to time.

The courses in Chemical Engineering are as follows:

202. Elementary Quantitative Analysis. (*1-6*).

This course serves as an introduction to the methods of exact analysis, and is regarded as preliminary training for the more advanced courses. In the class-room the practice and theory of the laboratory exercises are dealt with by lectures and recitations. Special attention is given to stoichiometry.

The laboratory work consists of a number of carefully selected experiments in quantitative analysis designed to typify operations of general application. The work is first gravimetric, then volumetric. In the early periods compounds of known composition and purity are analyzed but later substances of industrial significance, whose percentage composition is known only to the instructor are undertaken. Near the close of the term an analysis is made of a carbonate or silicate rock for the commonly determined constituents.

Text: Quantitative Chemical Analysis, Talbot.

Prerequisite: Chemistry 205.

301, 302. Advanced Quantitative Analysis. (*1-8, 1-3*).

This course is a continuation of Chemical Engineering 202. The theory is devoted to lectures and recitations based on the work in the laboratory.

Text: Quantitative Analysis, Mahin.

The laboratory work comprises the analysis of alloys, fuels, ores, rocks, gas, water, and inorganic substances of industrial importance.

Prerequisite: Chemical Engineering 202.

307. Industrial Chemistry. (3-0).

This is an introductory course, covering the principal applications of chemical processes to commercial products, mostly organic in nature, such as gas manufacture, petroleum products, soaps, the starch and sugar industries, and the manufacture of paper, leather, and explosives. The manufacture of fertilizers, cement and ceramics is also considered.

Text: Industrial Chemistry, Rogers.

Prerequisite: Chemistry 101, 102.

401, 402. Physical Chemistry. (3-4).

This course presents physical explanations of chemical and allied phenomena, together with a mathematical exposition of the laws involved. Some of the subjects thus developed are the atomic theory, the periodic law, solubility, fusion, vaporization, the phase rule, dissociation in solution, chemical equilbrum, and relatve chemical activity. It leads up to a consideration of the best research of today. Most of the theoretical conclusions deduced in the class-room are confirmed in the laboratory. Lectures and recitations.

The laboratory work consists of the calibration of apparatus, determination of molecular weights, heats, of reaction, rate of reaction, Law of Mass Action and other related topics. During the second term most of the experiments deal with electrical phenomena. A few experiments illustrating electro-chemical processes of commercial importance are performed.

Prerequisite: Chemistry 301 and 302; Mathematics 204.

403, 404. Technical Analysis. (2-8, 2-6).

The theory consists of lectures and conferences dealing with technical methods of analysis and with principles of chemical analysis and control, and with the application to problems other than those being carried out by the students in the laboratory. As the work of the students diverges, individual conferences will be arranged with each during which his particular problems will be discussed. Reference will be made to the library and current technical literature.

The early part of this course is essentially a continuation of Chemical Engineering 302, but the substances dealt with are chiefly organic and include asphalt, oils, soaps, paints, sugars, and foods. The latter part is devoted to a comparison of different methods of analysis, to detailed investigation of problems relating to chemical control, and to such work as seems suitable to the requirements of the individual student.

Prerequisite: Chemical Engineering 302.

406. Microchemical Methods. (0-2).

This course is designed to give the student some knowledge of the use of the microscope in qualitative and quantitative analysis. General methods are first explained and dealt with, followed by an examination of various substances to which this method of analysis is particularly adapted.

Open to Juniors and Seniors who have had a course in Quantitative Analysis.

407. *Industrial Chemistry.* (*3-0*).

Same as course 307.

408. *Metallurgy of Iron and Steel.* (*2-0*).

In this course the metallurgy of iron and the manufacture of steel are considered in detail, especial attention being given to the nature and location of valuable iron ore deposits, together with suitable fluxes; to the nature and availability of proper fuels, together with the furnaces used; to the constitution of the resulting pig iron and the manufacture of steel therefrom; and finally to the chemistry of the different kinds of steel and their adaptability in engineering practice. Lectures and recitations.

Text: The Metallurgy of Iron and Steel, Stoughton.

Prerequisite: Chemistry 101, 102.

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR SPENCE, PROFESSOR MORRISON, PROFESSOR LOVE, ASSOCIATE
PROFESSORS RICHEY, COGHLAN, ASSISTANT PROFESSORS
GREEN, FRANCISCO.

201. *Plane Surveying.* (*3-4*).

Chaining; construction use, and adjustment of the compass, level, transit, and minor surveying instruments; land survey computations; stadia; topographic and city surveying; general surveying.

Text: Plane Surveying, Raymond.

Students are required to become familiar with the various instruments by adjusting them and using them in the field to work out various practical problems. They must take all necessary notes, make calculations and prepare maps and profiles of the work done.

Prerequisite: Mathematics 103.

202. *Railroad Engineering.* (*2-4*).

The theory and practice of simple and compound curves is taught in both class-room and field, and such problems are given as will illustrate the application of the theory to actual working conditions.

Text: Field Manual for Railroad Engineers, Nagle.

Problems in simple and compound curves are assigned, the notes calculated and the curves "run out" in the field.

Prerequisite: Civil Engineering 201.

204. Analytic Mechanics. (3-0).

A study of the fundamental principles of mechanics, with numerous problems showing their application in engineering. Both kinetic and statics are considered, but especial emphasis is put upon the applications of the principles of static equilibrium.

Text: Analytic Mechanics, Miller and Lilly.

Prerequisite: Mathematics 203.

206. Plane Surveying. (2-3).

After the fundamental principles of surveying have been covered, special attention is paid to building and lot surveys, laying out plots, foundations, etc.

Text: Plane Surveying, Raymond.

The use and adjustment of instruments and the field and drafting room methods are given due attention.

Prerequisite: Mathematics 103.

301, 302. Graphics. (0-2).

Elements of graphic statics. Use of the force and equilibrium polygons. Determination of centers of gravity and moments of inertia of areas. Bending moment diagrams. Determination of dead and wind load stresses in simple trusses by means of stress diagrams.

Text: Roofs and Bridges, Part II, Merriman and Jacoby.

Prerequisite: Civil Engineering 204.

303. Railroad Engineering. (3-4).

A continuation of course 202 covering transition curves, frogs and switches, vertical curves, earthwork, overhaul, estimates, etc.

Text: Field Manual for Railroad Engineers, Nagle.

Theory is demonstrated in the field by the working out of assigned problems and actually doing the necessary field work. This practice, as well as that of 202, is preliminary to the more elaborate field work in course 400.

Prerequisite: Civil Engineering 202.

304. Railroad Construction. (2-0).

Railroad surveys; materials; structures; equipment; costs; economics.

Text: Railroad Construction, Webb.

Prerequisite: Civil Engineering 303.

305. Mechanics of Materials. (4-2).

This course covers a treatment of the resistance of materials and the mechanics of pipes, riveted joints, beams, columns, shafts, etc. After the study of the elementary mechanics of these structures, attention is given to more advanced topics, such as combined stresses, compound beams and columns, resilience, impact, and fatigue of materials.

Text: Mechanics of Materials, Merriman.

Determination of the strength, ductility, modulus of elasticity, and other properties of engineering materials. Various tests of timber, steel, cast iron, cement, etc., are made by the student and reports submitted showing results. In these reports considerable attention is given to the presentation of results in clear and condensed form by means of curves and tables.

Prerequisite: Mathematics 204.

306. Masonry. (3-0).

The principles of masonry construction in general, except as applied to reinforced concrete, are covered in this course.

Text: Treatise on Masonry Construction, Baker.

Prerequisite: Civil Engineering 305.

308. Roofs and Bridges. (3-0).

Determination of dead load and wind load stresses in roof trusses analytically by resolution of forces and by moments. Study and application of analytical methods for determining stresses in simple truss bridges caused by dead load, live load, wind load, impact, etc. Study of maximum and minimum stresses.

Text: Roofs and Bridges, Part I, Merriman and Jacoby.

Prerequisite: Mathematics 204, Civil Engineering 204.

310. Water Supply Engineering. (2-0).

A general study of the sources of water supply for domestic use; the quantity and quality of a supply; the necessity for, and methods of, purification; collection, storage, and distribution of water; the construction and equipment of a complete system.

Text: Public Water Supplies, Turneaure and Russell.

Prerequisite: Civil Engineering 311.

311, 312. Hydraulics. (2-0, 2-2).

The laws governing water at rest and in motion, as related to engineering problems. The flow of water in pressure mains, sewers, aqueducts, open channels, and rivers; measurement of the flow of water by nozzles, orifices, weirs, and meters; estimates for water supply and water power; theory and efficiency of motors, wheels, turbines, rams and pumps.

Text: Treatise on Hydraulics, Merriman.

Calibration of nozzles, orifices, water meters, weirs, and pressure gauges; efficiency tests on impulse motors, hydraulic rams, and centrifugal pumps of one, two, and three stages.

Prerequisite: Mathematics 204.

314. Strength of Materials. (2-2).

A study of the strength of the common materials of engineering construction, and of the mechanics of simple structures such as pipes, beams, and columns.

Text: Strength of Materials, Murdock.

The practice is similar to that of course 305.

316. Mechanics of Materials. (4-2).

Same as course 305.

317. Strength of Materials. (2-2).

Same as course 314.

318. Surveying, Stresses. (3-3).

An elementary course in surveying, with especial attention to the use of the transit and level; followed by a short course in the determination of stresses in simple types of framed structures, by analytic and graphic methods.

Texts: Surveying Manual, Pence and Ketchum; Graphic Statics, Malcolm.

319. Trigonometry and Farm Surveying. (3-4).

Chain surveying; adjustments and use of instruments in leveling, compass surveying and transit surveying with special reference to the form.

Text: Practical Surveying, McCullough.

320. Contracts and Specifications. (2-0).

Same as course 410.

324. Stresses. (2-2).

Elements of graphic statics, use of force and equilibrium polygons, stress diagrams for the simpler forms of framed structures. Analytical determination of reactions and stresses for roof trusses. Maximum and minimum stresses.

Text: Graphic Statics, Malcolm.

Prerequisite: Civil Engineering 204.

400. Field Practice. Summer following Junior year; 4 weeks.

A summer practice course in which effort is made to approximate the actual working conditions of preliminary and location surveys.

The class will be required to put in the full working day, and to complete exercises assigned in railroad and topographic surveying; triangulation, river gauging; road and street location; mapping.

Additional problems of benefit to the student may be assigned.

Reference text: Field Manual for Railroad Engineers, and Manual for Resident Engineers, Molitor and Beard.

401. Railroad Drafting. (0-4).

Office methods of working up the notes of reconnoissance, preliminary and location surveys and maintenance surveys. This includes the completion of a map, a profile and estimate of the line located in course 400.

402. Sewage. (2-0).

Questions relating to the amount of sewage, kind of system, design, construction, maintenance, and methods of sewage treatment and disposal, receive special attention in this course.

Text: Sewerage, Folwell.

Prerequisite: Civil Engineering 311.

403. Roofs and Bridges. (2-8).

The determination of stresses in the more complicated structures and the design of simple trusses.

Text: Roofs and Bridges, Parts I and III, Merriman and Jacoby.

The determination of stresses by various graphic methods followed by the design of a Parker truss; after the design the student is required to make detailed drawings.

Prerequisite: Civil Engineering 308.

404. Bridge Design. (0-4).

A continuation of the practice in course 403.

Prerequisite: Civil Engineering 403.

407. Roads and Pavements. (3-0).

This course is intended for students in general civil engineering, and covers a brief general study of country roads and city pavements. Highway location, design, construction and maintenance are studied; also road laws, finances, organization and supervision.

The text is supplemented by lectures, the use of bulletins, road machinery, models and samples of materials.

Text: Elements of Highway Engineering, Blanchard.

Prerequisite: Civil Engineering 201.

408. Higher Structures. (4-4).

The determination of stress in swing, cantilever, and suspension bridges, and in arches.

Text: Roofs and Bridges, Part IV, Merriman and Jacoby.

Prerequisite: Civil Engineering 403.

409. Irrigation and Drainage. (2-0).

The determination of the amount of water available, the losses, the detriments, the quantity of water required and the application of the principles of hydraulics; the design, location and construction of canal works; the design, location and construction of storage reservoirs. Existing irrigation systems and methods are reviewed.

Text: Principles of Irrigation Engineering, Newell and Murphy.

Prerequisite: Civil Engineering 311 and 312.

410. Contracts and Specifications. (2-0).

A brief study of the law of contracts as applied to engineering operations; the relation of the engineer to the owner and to the contractor; the necessity for, and preparation of, engineering specifications and the accompanying documents; general and specific clauses in specifications; illustrative examples.

Texts: Elements of Specification Writing, Kirby; Contracts in Engineering, Tucker.

411, 412. Hydraulics. (2-0, 2-2).

Same as course 311, 312.

413. Reinforced Concrete. (2-2).

The theories of stress distribution, and various systems of reinforcement employed in the construction of beams and columns are discussed, and illustrative examples studied. Determination of stresses and elementary design, based upon the assumptions commonly made, are taken up by means of practical problems solved by the student.

Text: Reinforced Concrete Construction, Vol. I, Hool.

(In Course IV the practice is included in Civil Engineering 405.)

Prerequisite: Civil Engineering 204, Civil Engineering 314 or equivalent.

415, 416. Highway Construction and Maintenance. (4-0, 3-0).

These two courses together cover the construction and maintenance of all types of roads and pavements. The text-book is supplemented by frequent reference to bulletins, standard specifications, trade catalogues, proceedings of engineering societies, and current engineering periodicals.

Text: Text-book on Highway Engineering, Blanchard and Drowne.

417. Highway Materials (2-2).

The various materials used in the construction and maintenance of roads and pavements are studied in this course, especially the mining, manufacture, inspection and testing of road oils, oil asphalts, malthas, natural asphalts and tars. The laboratory work consists of standard tests of non-bituminous materials.

Texts: Dust Preventives and Road Binders, Hubbard; Text-book on Highway Engineering, Blanchard and Drowne.

418. Cost Keeping. (1-0).

The elements of cost analysis engineering and scientific management.

Text: Cost Keeping and Management Engineering, Gillette and Dana.

419. Road and Street Systems. (*1-0*).

The design of road and street systems with reference to city planning.
Text: Width and Arrangement of Street, Robinson.

420. Street Cleaning. (*1-0*).

Street cleaning and the collection and disposal of refuse.
Text: Modern Methods of Street Cleaning, Soper.

423. Bridge Design. (*0-4*).

The design of highway bridges.
Text: To be selected.
Prerequisite: Civil Engineering 308.

426. Highway Bridges and Culverts. (*1-4*).

This course includes lectures and problems in the design and construction of highway bridges and culverts. The types of bridges best suited to various traffic conditions are studied, and such questions as the size of waterway, width of road, etc., are taken up in detail.
Text: To be assigned.
Prerequisite: Civil Engineering 413, 423.

428. Sewerage and Filtration. (*3-4*).

A study of sewage disposal and purification.
Text: To be selected.

429. Highway Laws, Economics and Organization. (*2-0*).

This course takes up a study of the road laws of Texas and other States, benefits of good roads, methods of financing highway construction and maintenance, and organization of State and municipal highway departments.
Text: To be assigned.
Prerequisite: Civil Engineering 322.

431. Stresses. (*2-3*).

A continuation of course 324. Stresses in trusses are determined, both graphically and algebraically. Graphical methods are applied in the investigations of the three-hinged arch, simple and fixed beams, and other structures.
Text: Graphic Statics, Malcolm.
Prerequisite: Civil Engineering 324.

433. Plane Surveying. (*2-2*).

Same as course 206.
Text: Plane Surveying, Raymond.
Prerequisite: Mathematics 103.

438. Higher Structures. (2-3).

The determination of stresses in arches and domes.
Text: To be assigned.
The complete design of an arch rib.
Prerequisite: Civil Engineering 308.

FOR GRADUATES.

501. Least Squares. (2-0).

The theory of least squares, and its application to the adjustment and comparison of engineering data, with special emphasis upon the methods of the United States Coast and Geodetic Survey.
Text: Least Squares, Merriman.

502. Geodesy. (2-0).

A further application of the method of least squares to problems in precise surveying. Study of the public land surveys, location of parallels of latitude, township lines, etc.
Text: Precise Surveying and Geodesy, Merriman.

503. Development of Water Powers. (2-0).

Surveys and hydraulic problems in connection with water-power development; market conditions and economic considerations; estimates of cost of construction and operation; reports.
Text: To be selected.

504. Astronomy. (3-0).

A course in general astronomy with special emphasis to engineering applications.
Text: General Astronomy, Young.

505. Sanitary Science. (2-0).

A consideration of the foundations upon which the practice of public sanitation is based.
Text: To be assigned.

506. Reclamation Engineering. (1-0).

Assigned readings, dealing with the methods adopted and scope of work caused by the United States Reclamation Service.

507, 508. Higher Structures. (2-8).

Two-hinged arch; the elastic arch.
Text: To be assigned.

509, 510. General Civil Engineering. (2-4).

The subject offered is made to conform to the character of instruction best fitted for particular cases, the student being allowed to indicate his preference.

FOR STUDENTS IN SHORT COURSES.

24. Plane Surveying. (2-4).

An elementary course in plane surveying. The construction, use and adjustment of the compass, level, and transit; methods, computations, and platting.

Text: Plane Surveying, Raymond.

Methods of measurements, use of the level, "running out" of areas and the adjustment of the instruments.

Prerequisite: Mathematics 13.

DEPARTMENT OF DAIRY HUSBANDRY.

PROFESSOR RIDGWAY, ASSISTANT PROFESSOR CLUTTER, MR. THOMAS.

102. Elementary Dairying. (2-2).

A course dealing with the secretion and composition of milk, and its products; the use and application of the lactometer in the determination of total solids and adulterations; the various methods of cream raising.

Text: Milk and Its Products, Wing.

301. Technology of Milk. (2-0).

The food value of dairy products. The utilization of dairy by-products.

Text: Dairy Technology, Larsen and White.

Prerequisite: Dairy Husbandry 102.

302. Dairy Manufactures. (2-4).

A course dealing with the manufacture of the more common dairy products, such as butter, cheese, and ice cream.

Text: Principles and Practice of Buttermaking, McKay and Larsen.

Prerequisites: Dairy Husbandry 301, Agricultural Engineering 305, Biology 305.

401. Herd Book Study. (0-4).

The tracing and studying of the pedigrees of the leading strains and families of dairy cattle.

Prerequisites: Dairy Husbandry 102, Animal Husbandry 302.

402. Milk Production. (3-2).

This course covers the field of dairy husbandry in its relation to the producer. The breeding, feeding and management of dairy cattle will be given special consideration.

Text: Feeds and Feeding, Henry and Morrison.

Prerequisites: Animal Husbandry 401, Dairy Husbandry 401, Biology 401.

403. Factory Management. (2-2).

This course will deal with the organization, construction, and management of creameries and ice cream factories, with special reference to creamery refrigeration and creamery accounting.

Prerequisite: Dairy Husbandry 302.

404. Seminar. (2-0).

Devoted to a study along selected lines of research, with a review and study of the most recent Experiment Station work.

(Open only to students taking Dairy Husbandry 402.)

405. Milk Inspection. (1-2).

Sanitation and pasteurization of milk and the testing of milk and its products for preservatives and adulterations.

Prerequisites: Dairy Husbandry 102, Biology 306.

FOR STUDENTS IN SHORT COURSES.

21. Elementary Dairying. (2-2).

A modification of course 102 dealing specially (in a more practical way) with herd record keeping and herd testing.

Text: Milk and Its Products, Wing.

24. Farm Dairying. (2-2).

The feeding, breeding, and management of dairy cattle; the use and care of cream separators, and the manufacture of butter on the farm.

Text: Dairy Cattle and Milk Production, Eckles.

DEPARTMENT OF DRAWING.

PROFESSOR A. MITCHELL, ASSISTANT PROFESSOR GEIST, MR. LANGFORD, MR. MATHEWS.

101. Mechanical Drawing. (0-3).

Care and use of drawing instruments, simple exercises in the use of drawing instruments, instrumental and free-hand lettering, geometrical constructions, constructions of plane curves, plane and axometric projections.

Text: Mechanical Drawing, Part I, Giesecke.

102. Mechanical Drawing. (0-3).

Problems in descriptive geometry involving points, lines, planes, tangency, intersections of planes and solids, intersections of solids, development of surfaces, shades and shadows, linear perspective. This course is parallel to and is an application of courses 103 and 104.

Text: Instrumental Exercises Descriptive Geometry, Mitchell.

Prerequisite: Drawing 101, 103.

103, 104. Descriptive Geometry. (2-0).

Class-room exercises, quizzes, and lectures on general and special problems relating to points, lines, planes and solids; problems in shades and shadows and in perspective. Special attention is paid to the representation of objects, by orthographic projection, in the first and third angles.

Text: Descriptive Geometry, Giesecke and Mitchell.

105. Freehand Drawing. (0-1).

Drawing from geometrical solids, common objects, plaster casts, still life, to study form, proportion, light and shade. Because of the need of facility in this field, considerable importance is attached to free-hand drawing; the aim is to develop in the student the power of free, artistic expression.

106. Freehand Drawing. (0-1).

Drawing, with special attention given to measuring, dimensioning and describing machines, machine parts, engineering structures and details.

The course is varied to meet the practical needs of students in the different engineering departments.

Prerequisite: Drawing 105.

108. Freehand Drawing. (0-1).

Designing of figures and patterns for fabrics.

Prerequisite: Drawing 105.

109. Freehand Drawing (Elementary). (0-3).

Line charcoal drawings of "blocks" and casts of heads and simple architectural ornament.

110. Freehand Drawing (Elementary). (0-4).

Shaded charcoal drawings of blocks and casts of heads and simple architectural ornament.

Prerequisite: Drawing 109.

112. Shades and Shadows, Perspective. (0-3).

Architectural shades and shadows. Building perspective.
Texts: Shades and Shadows, McGoodwin; Perspective, Lubschez.
Prerequisite: Drawing 101, 103.

119, 120. Freehand and Mechanical Drawing. (0-4).

Elementary principles of freehand drawing, sketching from geometrical solids and common objects followed by drawing from botanical and entomological specimens.

Simple exercises in the use of drawing instruments, instrumental and freehand lettering, geometrical constructions, orthographic and isometric projections.

Text: Mechanical Drawing, Part I, Giesecke.

201. Mechanical Drawing. (0-4).

Standard conventional section lining, drawing of standard bolts, nuts, rivets and threads; helixes, elementary parts of machines and engineering structures.

Text: Mechanical Drawing, Part III, Giesecke.
Prerequisite: Drawing 101.

202. Mechanical Drawing. (0-2).

A continuation of course 201, including patent office drawings, working drawings of machines, engineering structures and details. The student is required to carefully sketch and measure the model; then, from his dimensioned sketch he makes on detail paper and traces his working drawings.

This course is varied to meet the practical needs of students in the different engineering departments.

Prerequisite: Drawing 201.

209. Freehand Drawing (Advanced). (0-4).

Line charcoal drawings of full-length antique and modern subjects; shaded charcoal drawings from casts of more complex architectural ornament.

Prerequisite: Drawing 110.

210. Freehand Drawing (Advanced). (0-4).

A continuation of course 209.
Shaded charcoal drawings of full-length antique and modern subjects.
Prerequisite: Drawing 209.

305. Topographical Drawing. (0-4).

Topographical lettering, conventional signs, contour lines, topographical maps, topographical sketching.

Text: Topography, Mitchell.

307. Topographical Drawing. (0-2).

A modification of course 305.
Text: Topography, Mitchell.

309. Freehand Drawing (Charcoal Life). (0-4).

Line charcoal drawings of the undraped figure; water color renderings of architectural subjects.
Prerequisite: Drawing 210, Architecture 202.

310. Freehand Drawing (Charcoal Life). (0-4).

Shaded charcoal drawings of the undraped figure; pen-and-ink and water-color sketches of the draped figure.
Prerequisite: Drawing 309.

315. Mechanical Drawing. (0-2).

Exercises in the use of drawing instruments, instrumental and freehand lettering, geometrical constructions, orthographic and isometric projections, working drawings of simple farm structures.
Text: Mechanical Drawing, Part I, Giesecke.

316. Freehand Drawing. (0-4).

Elementary principles of freehand drawing during first part of the term followed by water color rendering of foliage and general entourage.

409. Freehand Drawing (Life Class). (0-4).

Black-and-white and color studies of the undraped figure (guache and oil); sketches of the draped figure in various media.
Prerequisite: Drawing 310.

410. Freehand Drawing (Life Class). (0-4).

Color studies of the undraped figure (oil, water-color, pastel).
Prerequisite: Drawing 409, Architecture 310.

FOR STUDENTS IN SHORT COURSES.

11, 12. Mechanical Drawing. (0-3).

Proper care and correct use of drawing instruments, simple exercises in the use of drawing instruments, lettering, geometrical constructions, standard conventional signs, standard bolts, nuts, rivets, and threads; helixes, sketching, measuring and dimensioning elementary parts of machines.

This course is varied to meet the practical needs of students in the different engineering departments.
Text: Mechanical Drawing, Parts I and III, Giesecke.

13. *Freehand Drawing.* (*0-1*).

This course is practically the same as the course described under Drawing 105.

14. *Freehand Drawing.* (*0-1*).

This course is practically the same as course 106.

15. *Mechanical Drawing.* (*0-2*).

Same as course 315.
Text: Mechanical Drawing, Part I, Giesecke.

16. *Mechanical Drawing.* (*0-2*).

Working drawings of simple farm structures.

17, 18. *Freehand Drawing.* (*0-2*).

Sketching from geometrical solids, common objects, casts and natural specimens of plant and animal life.

51, 52. *Mechanical Drawing.* (*0-4*).

A continuation of Drawing 11 and 12, including detailed and assembled drawings of electrical and textile machinery, patent office drawings, tracing and blueprinting.

53. *Mechanical Drawing.* (*0-2*).

A modification of course 51.

(Full credits for two-year Courses in drawing will not be allowed to apply on four-year Courses.)

DEPARTMENT OF ECONOMICS.

PROFESSOR CLARK.

303. *Fundamental Principles of Economics.* (*3-0*).

The first term of the Junior year is given to a study of the principles of Economics as a foundation for the course in Rural Economics. The course of study considers the theory of economic activities concerning production, distribution and consumption; and the practical problems of credit, banking, foreign and domestic exchange, monetary systems, co-operation, tariff, transportation, trusts, corporations, and finance and taxation.

Text: Outlines of Economics, Ely.

304. Rural Economics. (3-0).

The second term of the Junior year is given to a more special application of economic theory to practical rural problems. Among the subjects considered are the conservation of land and other natural resources; land tenures; labor problems; economic and efficient co-ordination of the factors of production; scientific management; co-operative systems; and a survey of rural life.

Text: Agricultural Economics, Taylor.

306. Business Law. (2-0).

This course is designed to give the student a knowledge of such fundamental legal principles as will enable him to have an intelligent conception of his rights and obligations. The subjects treated are as follows: contracts, agency, partnership, joint stock companies; corporations, and real and personal property.

Text: Elements of Business Law, Huffcut.

401. Fundamental Principles of Economics. (3-0).

This is an adaptation of course 303 to the needs of students in the course in Agriculture.

402. Rural Economics. (3-0).

This course gives a general survey of the materials covered in courses 304, 305.

403. Fundamental Principles of Economics. (3-0).

This is an adaptation of course 303 to the needs of students in the course in Engineering.

404. Business Organization and Management. (3-0).

This course considers the common forms of business organization; the partnership, the joint stock company, and the corporation; the adaptation of the form of organization to the several classes of business undertakings, with the privileges and obligations accompanying each; and the technique of modern management.

Text: Business Organization and Combination, Haney.

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR BOLTON, ASSOCIATE PROFESSORS CANNON, WOOTEN, ASSISTANT PROFESSORS JAMES, SHEPHERD.

203. Electricity and Magnetism. (3-4).

Lectures, recitations and problems in electricity and magnetism.

This includes a laboratory investigation of the phenomena studied in the text-book.

Prerequisite: Mathematics 102, 103.

204. Electrical Measurements. (4-4).

Lectures and recitations on the theory, standardization and use of electrical measuring instruments, including galvanometers, bridges, voltmeters, ammeters, wattmeters, and recording instruments.

In connection with this course, a short time is devoted to the study of the National Electric Code and modern methods of wiring.

The practice is intended to clarify the ideas received by the student in the class-room. It includes the accurate measurements of various electrical quantities, such as resistance, inductance, capacity, and the effect of temperature, position, etc., on these quantities; a study of the various types of batteries to determine their adaptability to different uses; calibration and repair of instruments, such as ammeters, voltmeters, and wattmeters; tests of the magnetic properties of iron.

Prerequisite: Electrical Engineering 203, Mathematics 104.

301. Direct Currents. (4-6).

The course is devoted to the study of the theory and applications of direct current machinery.

The practice is intended to give practical demonstration of the theory. It includes the operation of dynamos and motors, the determination of characteristics and the measurements and calculation of losses, efficiencies and regulation.

Prerequisite: Electrical Engineering 204; or Physics 203, 204, Mathematics 201.

302. Alternating Currents. (5-4).

Lectures and recitations on the principles of alternating currents, including a study of the relations of voltage, current, resistance, inductance and capacity.

An experimental study of the effect of resistance, reactance, and capacity on alternating current circuits; the determination of wave shapes; and tests of some of the simpler types of alternating current machines.

Text: Alternating Currents and Alternating Current Machinery, Jackson.

Prerequisite: Electrical Engineering 301, Mathematics 204.

304. Direct Current Design. (1-4).

Lectures and recitations on the design of direct current machines.

Text: Electrical Machine Design, Gray.

Practice in the design of parts of the magnetic circuit of electrical machines, followed by the design of a direct current dynamo.

Prerequisite: Electrical Engineering 301.

305, 306. Electrical Machinery. (2-0, 2-3).

Lectures and recitations on the operation and characteristics of dynamos, motors, transformers and other electrical appliances of the types most commonly met with in general engineering practice. This course is intended to give only a general idea of the subject. The course is intensely practical, only the more fundamental principles being studied in detail.

Text: Principles and Practice of Electrical Engineering, Gray.

The practice is designed to give the general engineering student some degree of familiarity with the operation and the more important characteristics of both direct current and alternating current machines.

Prerequisite: Physics 204, Mathematics 204.

307, 308. Electrical Machinery. (3-0, 3-3).

This course includes all the instruction given in courses 305, 306, but is somewhat more detailed. In this course special emphasis is laid on the study of the industrial application of motors and the operating characteristics of electrical machines usually found in power plants.

Practice, the same as for course 306.

Prerequisite: Physics 204, Mathematics 204.

310. Electric Lighting. (2-2).

Lectures and recitation on the principles of illumination, with special emphasis on the use of electric lamps.

This practice includes the design of systems of illumination for various purposes. The practice also includes the test of some modern illuminants and the test of the illumination in buildings already lighted.

Prerequisite: Physics 203, 204.

401, 402. Alternating Current Machinery. (4-4, 3-4).

This course embraces a study of alternating currents and alternating current machinery, including methods of generation, transformation and use; a study of wave shapes and quantities affecting wave shapes; and the effect of balanced and unbalanced loads.

The subject is treated from both the graphical and the mathematical viewpoint, the text being supplemented by lectures and problems.

Text: Alternating Currents and Alternating Current Machinery, Jackson.

The practical operation and determination of the characteristics of various types of alternating current machines.

Prerequisite: Electrical Engineering 302, or 308.

403. Electrical Machine Design. (2-4).

Lectures and recitations on the design of electrical machines.

Text: Electrical Machine Design, Gray.

Practice in the design of dynamos, motors and transformers. Working drawings of some of the machines are required, while for others the design of the electrical parts of the machine is considered sufficient.

Prerequisite: Electrical Engineering 302, 304; to be accompanied or preceded by Electrical Engineering 401.

405. Contracts and Specifications. (2-0).

A study of the law of engineering contracts and of specifications applying to the work of the electrical engineer. The student is required to draw up specifications covering various phases of engineering work. The course also touches on the application of business principles to engineering.

Prerequisite: Electrical Engineering 302, 304.

406. Electric Power Distribution. (2-0).

Lectures and recitations on the transmission and distribution of power by electrical methods. Many subjects not treated in the textbooks are studied, and the student is encouraged to investigate all available sources for information.

The student is required to design and estimate costs of several transmission and distribution systems.

Prerequisite: Electrical Engineering 401.

408. General Problems. (0-2).

A course of problems based on all engineering work required of the student previous to graduation.

Prerequisite: All subjects required before the second term of the Senior year.

424. Electric Railways. (2-2).

A study of railway apparatus, costs of construction and operation of electric railway systems, and operation methods. Students are required to make an engineering report on a small railway project, estimating cost of construction and operation and probable returns on investment.

The practice in this course consists of the test of electric railway motors, controllers, and other appliances, and tests of electric cars.

Prerequisite: Electrical Engineering 301.

(The right is reserved to withdraw this course if it is elected by fewer than five students.)

426. Illumination. (2-2).

A course dealing with the principles of illumination and the application of these principles to specific cases. Attention is given to the arrangement of electric lights for decorative purposes as well as for useful illumination.

The practice in this course includes the test of various types for illuminant, the design of lighting systems, and the test of the illuminations of buildings already lighted.

Prerequisite: Electrical Engineering 301, 305, or 307.

(The right is reserved to withdraw this course if it is elected by fewer than five students.)

428. Telephony. (2-2).

Lectures and recitations on telephone systems; their design, installation and management. This course includes a discussion of the relative advantages of the different types of telephones, and the faults and peculiarities met in each system.

An experimental study of telephones, switchboards, telephone circuits, and transmission systems.

Prerequisite: Electrical Engineering 301, 302.

(The right is reserved to withdraw this course if it is elected by fewer than five students.)

429. Applications. (2-0).

Lectures on the applications of electricity to use in the various industries. This includes a brief outline of the application telephony, illumination, electric railways, and industrial machine drive.

Must be accompanied by Electrical Engineering 401.

430. Plant Management. (2-2).

Lectures on the management of power plants. This includes discussion of records, reports, methods of increasing the load on the plant, factors affecting plant efficiency, etc.

The solution of problems affecting power plant efficiencies.

Prerequisite: Electrical Engineering 401.

(The right is reserved to withdraw this course if it is elected by fewer than five students.)

432. Electric Lighting. (2-2).

Same as course 310.

FOR STUDENTS IN SHORT COURSES.

21. Electricity and Magnetism. (3-4).

A modification of course 201.

Laboratory verification of the laws studied in the theory. The course also includes the use of instruments for the measurement of voltage, current, resistance, etc.

22. Direct Currents. (3-4).

A modification of course 301.

26. Telephone Plants. (2-0).

A descriptive course giving a brief general survey of the essential features of telephone exchanges, in order that in the subsequent more detailed studies the student may have a better realization of the relation to the entire plant of the parts being studied.

51, 52. Applied Electricity. (*3-4*).

A course of instruction covering magnetism and electricity, magnetic circuits, direct and alternating currents, and direct and alternating current machines and their applications. The subject is treated from a practical standpoint.

Electrical measurements and the experimental study of the construction and operating characteristics of electrical machinery.

55. Alternating Currents. (*3-0*).

A study of alternating currents with particular emphasis laid on the practical application of the subject matter. As far as possible, the subject will be treated from the graphical viewpoint.

56. Meters. (*2-0*).

A course covering the principles of operation, material of construction and methods of repair, test and calibration of electrical meters. This includes switchboard meters and watt-hour meters of various types.

Practice in the repair, calibration and test of meters is included in course 62.

57. Wiring and Illumination. (*3-0*).

A study of the rules and methods for exterior and interior wiring, including calculations for material to be used and estimates of costs.

The course also includes lectures and recitation on lighting and illumination, with special emphasis on electric lighting. The practice for this course is included in course 61.

58. Electrical Machinery. (*6-0*).

A course covering the principles involved in the design and operation of electrical machinery. The course deals with transformers and both direct and alternating current motors and generators and the applications of each type of machine.

59, 60. Telephony. (*3-0, 3-2*).

Manual and automatic switchboards, supervising and testing equipment, battery supply, power plants, protection, office buildings, outside wire plant, private branch exchanges, inter-communicating systems, composite and phantom circuits, operating methods, traffic studies, fundamental plans, rate systems, measured service, fault location, inductive disturbances, transmission equivalents and transmission studies.

Studies of cross-talk and induction, determination of transmission equivalents, and effects of bridged and series apparatus on transmission.

61, 62. Electrical Laboratory. (*0-8*).

Instruction and practice in testing electrical machines, including generators, motors, transformers, meters, lamps, etc. The course will also include practice in laying out circuits and installing electric wires. This practice is intended to strengthen the theoretical courses and at the same time give the student a thorough practical knowledge of electrical appliances and methods.

Part of the practice is devoted to the construction and repair of electrical machines. It is intended to familiarize the student with the construction of electrical machines and to give him sufficient knowledge of materials and methods to enable him to make repairs to such machines.

63. Telephone Testing. (*0-6*).

Practice in wiring, testing, and repairing. Insulation measurements, location of grounds and crosses, capacity measurements, battery tests, use of "telefault," tests of protective apparatus, locating defects in equipment and wiring, adjusting instruments.

64. Technical Business Forms. (*1-0*).

The principles of contracts, specifications, and business forms for telephone and other electric systems.

The student is required to prepare specifications covering various appliances, and to make written reports so that he may learn to write a clear, concise technical report.

68. Telephone Plant Design. (*0-4*).

Fundamental plan and switchboard design for small exchange, with estimate of fixed charges and operating costs. Special design problems in connection with larger exchanges.

DEPARTMENT OF ENGLISH.

PROFESSOR FOUNTAIN, ASSOCIATE PROFESSORS THOMAS, BRACKETT, ASSISTANT PROFESSORS COFER, GUNTER, CLICK, PAGE, MAYO,
MR. WILSON, MR. BITTLE.

The courses are as follows:

103, 104. Rhetoric and Composition. (*3-0*).

This course involves recitations, oral and written, readings from masterpieces of literature, composition writing, and personal conferences at hours to be arranged with the instructor.

201, 202. English Literature. (*3-0*).

This course affords an opportunity for the students to obtain a general knowledge of English literature, the different stages of development being illustrated by the critical reading of selections of prose and poetry from representative writers of each period. Short papers on assigned subjects are required.

Prerequisite: English 103, 104.

203, 204. English Composition. (1-0).

This course is intended to give practice in organizing and writing longer themes than are required of the Freshmen. In addition to weekly compositions, the work involves recitations and personal conferences.

Prerequisite: English 103, 104.

211, 212. English Literature. (3-0).

In this course a somewhat detailed study will be made of some of the masterpieces of English Literature from Shakespeare to Tennyson. Weekly written reports will be required.

301, 302. Argumentation. (1-0).

This course involves a study of the essentials of argumentation, and practice in drawing briefs. Personal conferences with the instructor are required.

311, 312. English Literature. (3-0).

Same as course 211, 212.

321, 322. English Literature. (2-0).

In this course English literature from the beginning of the Victorian era to the present time will be treated as a reflection of the predominant ideals in politics, economic theory, science, philosophy, and religion. Weekly themes in connection with the reading will be a feature of the course.

401, 402. Public Speaking. (1-0).

The aim of this course is to help the student to a simple, direct manner of speaking. The work consists of the oral interpretation of some of the best orations, writing and delivering original pieces, and debating. Personal conferences with the instructor are required.

421, 422. English Literature. (2-0).

Same as course 321, 322.

421a, 422a. English Literature. (3-0).

A modification of course 321, 322.

FOR STUDENTS IN SHORT COURSES.

11, 12. Grammar and Composition. (3-0).

This course includes a thorough review of the essentials of English grammar, composition writing, and personal conferences with instructors.

51, 52. Practical Composition. (*3-0*).

This course includes a review of the fundamental principles of composition. The written exercises are on practical subjects, especial attention being given to business correspondence. Personal conferences with the instructor are required.

DEPARTMENT OF ENTOMOLOGY.

ACTING PROFESSOR BILSING, MR. YINGLING.

The courses are as follows:

201. Systematic Entomology. (*2-2*).

In this course the student is taught the anatomy and physiology of insects as a basis for the development of practical control measures. The various orders of insects are studied, particular attention being given the forms that are decidedly injurious or beneficial. Considerable time is given to the biological aspect of the subject. The student also becomes familiar with entomological literature and with the methods by which insects are identified and classified.

Text: Elementary Entomology, Sanderson and Jackson.

In the laboratory, the student studies both external and internal anatomy of insects, aided by models and by actual dissection. Drawings are made of insect structures and of specimens typical of the various orders.

202. Economic Entomology. (*2-2*).

This course is the logical continuation of course 201, and is open only to students who have successfully completed that course. The student, having become familiar with insect anatomy and physiology, here takes up the applied aspects of the subject. Special attention is given to the life history of the insects that are injurious to staple crops, fruit and truck crops, live stock, etc., together with measures for their control by means of intelligent farm practice and the use of insecticides. In connection with the practice work, the student is required to make a collection of local insects, consisting of at least fifty specimens, all of which must be properly pinned, labeled and correctly named. The importance of parasites and diseases and their utilization is also taught.

Text: Insect Pests of Farm, Orchard and Garden, Sanderson.

In the practice, the student prepares various insecticides for use, learns how to handle spraying machinery, and, so far as opportunities permit, tests the effect of various control measures upon injurious insects. Methods of fumigation for the destruction of insects infesting nursery stock, buildings and stored products are put into practice. Field trips are made to study injurious insects and for observing the effects of cultural methods or climatic conditions upon the destructiveness of insects.

Prerequisite: Entomology 201.

203. Veterinary Entomology. (3-2).

A study is made of the more important insects which affect domesticated animals. Special attention is given those insects which act as disease carriers. Methods of control are discussed. Flies, fleas, ticks and mites are some of the forms which are given attention in this course.

301. Systematic Entomology. (2-2).

Same as course 201.

302. Economic Entomology. (2-2).

Same as course 202.

304. Apiculture. (2-2).

This course is so arranged as to give the student a practical working knowledge of beekeeping which will prepare him for conducting a small apiary in connection with other farm work or for entering commercial beekeeping as a vocation. The course includes a study of the biology and life history of the honey bee, methods of making hives and equipment, management of swarming, honey plants, harvesting and marketing of honey, wax production and refining, control of bee diseases and elementary queen-rearing. The department is equipped with an apiary of medium size, hives, tools, wax-presses, automatic extractors and all standard equipment used in modern beekeeping.

Lectures and recitations, with supplementary reading.

306. Animal Parasites. (2-2).

This course consists of a study of insects and other arthropods which are parasitic upon domestic animals or which are concerned in the transmission of diseases of live stock, and means for their eradication or control.

Lectures, supplemented with literature.

Prerequisite: Entomology 201.

311. Advanced Systematic Entomology. (2-2).

This course is intended for students fitting themselves for Experiment Station or extension work of an entomological nature. The course embraces the collection and classification of insects in all orders, a study of insect taxonomy and the use of literature in identifying insects.

Prerequisite: Entomology 201, 202.

312. Advanced Systematic Entomology. (2-2).

This course is a continuation of entomology 311. The student having become familiar with the various orders is allowed to continue the study of general classification or to specialize in the classification of some particular group of insects.

Prerequisite: Entomology 201, 202.

401, 402. Advanced Systematic Entomology. (2-2).

Same as course 311, 312.

403. Advanced Economic Entomology. (1-4).

This course is especially arranged for students intending to follow entomological work after graduation. Particular attention is given to economic problems in entomology, methods of entomological research and field methods of insects investigation and control. The course also embraces insectary methods of breeding insects, studies of entomogenous fungi and of insect parisitism.

Lectures, supplemented with literature.

Prerequisite: Entomology 201, 202.

404. Advanced Economic Entomology. (2-2).

This course is a continuation of course 403.

Prerequisite: Entomology 201, 202.

405. Fruit Insects. (2-4).

This course is intended for students who are specializing in horticulture and who wish more definite information concerning the insect pests of fruit and truck crops. In this course a detailed study is made of the life history, habits and control of the pests of these crops. Special attention is given to control methods adapted to Texas conditions and to the value of parasites and orchard management in the control of insect pests.

Prerequisite: Entomology 201, 202.

406. Advanced Economic Entomology. (0-2).

Supplementary to the practice of course 404; for Science students.

414. Apiculture. (2-2).

Same as course 304.

FOR STUDENTS IN SHORT COURSES.

54. Elementary Economic Entomology. (2-2).

A general outline of the classification of insects is here offered, together with a sufficient study of anatomy and biology for the understanding of control measures. Particular attention is given to injurious insects of field, garden and orchard, together with the methods and insecticides by which they may be controlled.

The practice consists of a sufficient dissection and study in the laboratory to familiarize the student with the different orders of insects. This is supplemented by field studies.

Text: Agricultural Entomology, Osborn.

56. Elementary Apiculture. (*2-2*).

In this course the life history and habits of the honey bee are discussed. The student is taught the making of hives, the management of swarming, the harvesting and marketing of honey. The course is arranged so as to give the student a practical working knowledge of beekeeping.

DEPARTMENT OF FORESTRY.

PROFESSOR FOSTER, MR. KRAUSZ.

The courses offered by the forestry department are not intended to equip students for the profession of forestry. Experiences in all parts of the United States have shown that a training in professional forestry cannot be given in less than five years with any assurance of a reasonably successful career. It is, therefore, urged that any student desirous of making forestry his life work shall first obtain a bachelor's degree, taking as much work as possible in biology, chemistry, English, mathematics, and agriculture, including the courses offered in forestry. After the completion of such a course the student who wishes to follow forestry should expect to conclude his work with one or two years at some professional school of forestry which trains men for this profession.

301. Principles of Forestry. (*3-0*).

This course is intended to give the student a general knowledge of forestry, tracing its history from the beginning in European practice to the United States and following its development in this country. In addition, the course consists of a general survey of the fundamental principles underlying forestry, including the relation of forests to soil, moisture, light, and climatic conditions; influences of forests upon stream flow; the important systems of treating woodlands practiced in Europe and in the United States; the habits of important economic timber trees and the character and uses of the more important woods; preparation of forest maps and working plans; methods of estimating standing timber and measuring its growth by the use of various forest instruments; artificial regeneration of forests by seeding and planting, and the best trees for ornamental and shelter belt planting; effects of forest fires and the study of other important enemies of the forest; a brief treatise on the timber regions of the United States; the amount of standing timber and the consumption of timber; the practice of forestry by the government, particularly on its national forests, and the present status of forestry in the States and among private owners of timber land.

Text: Elements of Forestry, Moon and Brown.

302. Silviculture. (2-2).

This course consists of two parts, a study of trees under natural conditions, and the establishment of trees and forests by planting. The first part consists of a study of the life history of trees; the relation of different species to light, moisture, soil, temperature, and the effect of their association in the forest; origin and determination of forest types; the relation of forests to stream flow; description of forests; preparation of forest maps; improvement of young forests; and the proper cutting and use of mature forests so as to secure natural reproduction; silvicultural systems of cutting as practiced in the forests of Europe and the United States.

The second part considers the forest as an artificial establishment, and includes the collection, storage, testing, and germination of tree seeds; relative value of various species of trees for planting purposes; nursery practice; direct seeding; relative use of nursery and forest grown stock in planting; care of young plantations; costs of planting; planting for ornamental purposes; care of shade trees and parks; value of wind-breaks and shelter belts.

This course is supplemented by actual nursery and planting work.

Text: Seeding and Planting in the Practice of Forestry, Toumey.

401. Dendrology. (3-0).

The course in dendrology consists of a comprehensive study of the forest tree species of the United States and the more important introduced trees. This includes the botanical characteristics. distribution, classification and relative importance of the various species of trees. Both the summer and winter characteristics are examined and particular reference is made to those prominent and constant features which lead to ready identification. In this course the native and introduced trees of Texas and the commercial timber trees of the United States are given chief attention.

During the course each student is required to make a twig collection of not less than fifty different species of trees.

Text: Checklist of Forest Trees of the U. S., Subworth.

402. Wood Technology and Utilization. (2-2).

This course consists fundamentally of the study of the structure of the more important economic woods used in Texas and elsewhere in the United States. The student is taught first to become familiar with such characteristics as odor, taste, color, grain, and hardness in the different woods. and then to identify specimens definitely by studying their structure with the hand lens and the microscope. In addition, a study is made of the uses of the various woods and of the wood-using industries of Texas and other States. The student learns to become familiar with the sources of raw material which supply these industries.

Attention is given to methods of preserving timber from decay and wood testing as carried on in the United States.

Practice in this course consists chiefly in studying the various woods in the laboratory.

Text: Economic Woods of the U. S., Record.

412. Silviculture. (*2-2*).

Same as course 302.

DEPARTMENT OF HISTORY.

PROFESSOR CHASTAIN.

101, 102. Modern Europe. (*3-0*).

It is the purpose of this course to treat of those events ushering in and including the Modern Age; the rise of France under Louis XIV; the ascendency of Prussia and Russia; the development of England's colonial supremacy; the French Revolution and the Napoleonic era. The evolution of constitutional government in the states of Europe; the unification of Germany and Italy; the Eastern question; and problems of modern governments.

Text: The Development of Modern Europe, Volumes I and II, Robinson and Beard.

301. Industrial History of England. (*3-0*).

This course deals with the industrial development of England from earliest time to the present. The following subjects, among others, are considered: the manorial system; the disappearance of serfdom; the process and effect of enclosures; the guild system; the rise of the commercial classes; the industrial and agricultural revolution of the eighteenth century; the factory system and factory legislation; the free trade movement; the beginning and growth of the modern labor movement.

Text: Industrial and Social History of England, Cheyney.

302. Industrial History of the United States. (*3-0*).

In general, the growth of the colonies from isolated agricultural communities to a complex industrial and commercial society is followed. In consideration of this process, attention is given to the following subjects: the business aspect of the early colonies; the colonial labor, commerce and manufactures; the economic aspect of the Revolution; the western movement and public lands; the expansion of manufactures and commerce after the War of 1812; the protectionist movement; the development of internal improvement; the economic causes of the Civil War; the commerce and expansion since the war.

Text: Industrial History of the United States, Bogart.

303, 304. American History and Government. (*2-0*).

The purpose of this course is to fuse the study of social and industrial development with a study of political institutions—the keynote being found in the efforts of a hard people to appropriate and develop the greatest resources of the continent and there to realize their ideals of liberty and government. Therefore, the industrial development of the country finds an important place in the course. Attention is given to the following subjects: The European background of American History; Spain, France, and England in America; colonial self-government; the Revolution—its causes and importance; the Confederation and Constitution; the Federalist system; the Jeffersonian system; Jacksonian Democracy; westward extension; slavery and abolition; Civil War—its causes and importance; reconstruction, political, and economic; national problems; America as a world power; and the ideals of American government.

Text: American History, Bassett.

401. Industrial History of England. (*3-0*).

Same as course 301.

402. Industrial History of the United States. (*3-0*).

Same as course 302.

403, 404. American History and Government. (*2-0*).

Same as course 303, 304.

405, 406. History and Government. (*3-0*).

It is the purpose of this course to prepare the students for an examination for appointment as Second Lieutenant in the Cavalry, Field Artillery, and Infantry of the United States Army.

The courses "will comprise the history of Ancient Greece and Rome and all the important facts in general ancient history and in the history of Medieval Europe to the end of the fifteenth century; also the political, social, and economic history from the end of the Middle Ages to the present day."

The fundamental principles of Civil Government will be historically considered throughout the year.

Texts: Ancient World, West; The Development of Modern Europe, Robinson and Beard; An Introduction to the Study of Government, Holt.

DEPARTMENT OF HORTICULTURE.

PROFESSOR KYLE, ASSOCIATE PROFESSORS POTTS, HENSEL, MCGINNIS, ASSISTANT PROFESSOR COWART.

201. Plant Progagation and Orcharding. (3-2).

Lectures and recitations are given on the fundamental principles and methods of plant propagation and orcharding, including vegetables and fruits, and ornamentals.

Lectures and recitations.

Practice is given in propagation of plants from seed, budding, grafting and in planning, planting, pruning, spraying and general care of the orchard.

Text: Plant Propagation, Koins.

202. Vegetable Gardening. (2-2).

Detailed instruction in planting, equipping and operating vegetable gardens for home and commercial purposes, and practical demonstrations and experience in the field; a thorough discussion of the methods used in Texas in growing the most important vegetable crops.

Lectures and recitations.

The practice is devoted to the building of hotbeds, cold frames, the mixing and application of fertilizers, planting, cultivating, spraying and harvesting of vegetable crops.

301. Spraying. (1-2).

The history and development of spraying in the United States and foreign countries is studied, special attention being given to the evolution of spraying machinery and formulas.

Lectures and recitations.

Practical work in making various spraying mixtures for insects and diseases and applying the preparation to orchard and vegetable crops.

Prerequisite: Entomology 202.

302. Plant Breeding. (2-2).

This course is planned to give the student a better understanding of the benefits to be derived from the intelligent breeding of plants. The relation of horticultural varieties and hybrids to each other and to their parents is discussed, together with the principles of pollination, crossing and hybridization.

Most of the practice work is devoted to the cross pollination of our common plants, and to the study of natural variations arising among plants.

Text: Plant Breeding, Bailey and Gilbert.

Prerequisite: Horticulture 201 and 202.

303. Principles of Fruit Production. (3-2).

This course includes a comprehensive study of orchard management, including problems of location, soils, planting, cultivating, protection from insects and diseases, pruning, harvesting and marketing.

Lectures and recitations.

Practice is given in laying out orchards, pruning, etc. Field observations are made on cultivating cover crops, etc.

Text: Principles of Fruit Growing, Bailey.

Prerequisite: Horticulture 201.

304. Nut Culture. (2-4).

This course includes a study of those nuts which are of the most economic importance. Special attention is given to the native nuts. Top-working the native pecan and hickory to improved varieties of pecans is fully discussed.

Lectures and recitations.

Practice is given in budding and grafting pecans in the nursery row; also in top-working native pecans to improved varieties by means of the ring, patch, chip, crown budding and grafting. A critical study is made of the standard varieties of nuts.

Text: To be assigned.

Prerequisite: Horticulture 201.

307. Introduction to Landscape Art. (2-0).

This is a cultural course given for the purpose of developing in the student a true appreciation of Landscape Art.

Illustrated lectures and recitations.

Text: Rural Improvement, Waugh.

308. History of Landscape Design. (2-0).

A comprehensive study of the development of landscape design.

Illustrated lectures and recitations.

401. Pomology. (3-2).

A comprehensive study is made of the evolution of our native fruits. Special attention is given to the grape, plum, mulberry, apple, cherry, blackberry, dewberry, strawberry, persimmon, etc.

Lectures and recitations.

Practice in systematic pomology is given with such fruits as can be obtained during the season.

Text: To be assigned.

Prerequisite: Horticulture 303.

402. Experimental Horticulture. (2-4).

Practical methods of planning and carrying out experiments, such as are in vogue by the most up-to-date experiment stations.

The student will be required to plan his experiment, prepare the land, mix and apply the fertilizer, sow the seed, cultivate, spray, and harvest the crop and make a report on the results obtained. Projects must be selected by January 15th.

403. Subtropical Fruits. (2-2).

A study of all the species of subtropical fruits grown in this country. Special attention is given to the growing of citrus fruits and other hardy varieties of subtropical fruits that are adapted to the Texas coast region.

Lectures.

Practice in the study of representative citrus fruits and in the propagation of the different species of subtropical trees; special demonstration work in protecting citrus trees from frost.

Text: Citrus Fruits, Coit.

405. Bush and Vine Fruits. (2-2).

This course consists of a study of the propagation, culture, harvesting and marketing of small fruits, such as the blackberry, dewberry, strawberry, currant, grape, etc. Attention is given to the varieties best adapted to Texas conditions.

Lectures and recitations.

Practice is given in planning, planting, pruning, spraying and the general care of berry patches.

407. Introduction to Landscape Art. (2-0).

Same as course 307.

408. Floriculture. (2-2).

This course is designed to give the student a detailed knowledge of the culture and use of the annuals, perennials, and bulbous plants especially adapted to our climatic conditions. Home adornment with flower beds, flower borders, window boxes, and plants for the living room will be the salient thought throughout the course.

Practice will be given in the growing, transplanting and care of a few of the most useful plants.

Text: To be assigned.

409. Ornamentals. (2-2).

This course embraces a thorough study of the ornamentals adapted to Southern conditions.

Lectures and recitations.

Practice is given in the propagation and classification of ornamentals.

411. Marketing. (3-0).

This course includes a study of the most satisfactory methods of harvesting, grading, packing, shipping, storage and selling of fruits and vegetables. Good fruit properly harvested, graded, packed, transported, and delivered to the consumer in sound condition is the chief consideration of this course.

Lectures and recitations.

Prerequisites: Horticulture 202 and 203.

412. Horticultural By-products. (*1-4*).

This course is designed to enable the grower to utilize waste products of the orchard and garden or to save by canning the higher grades when prices are low.

Lectures and recitations.

Practice is given in the manufacture of fruit juices, preserves, jelly, catsup, soup stock, and canning.

Prerequisite: Chemistry 206.

413. Spraying. (*1-2*).

Same as course 301.

415. Landscape Design. (*3-4*).

This course gives the principles underlying Landscape Art. It also deals with the solving and drafting of problems dealing with landscape work.

Illustrated lectures and recitations.

Text: Design in Landscape Gardening, Root and Kelly.

Prerequisite: Horticulture 307.

416. Landscape Design. (*3-4*).

A continuation of course 415.

Text: To be assigned.

417. Civic Improvement. (*2-0*).

This course deals more especially with the proper laying out of towns and cities, and includes the fundamental principles of city planning; the study of streets, sidewalks, civic centers, and the general improvement of public and semi-public properties.

Text: City Planning, C. M. Robinson.

FOR STUDENTS IN SHORT COURSES.

21. Plant Culture and Propagation. (*3-2*).

A modification of course 201. The first part is devoted to plant culture, and is followed by a thorough discussion of the propagation of plants, including all the fruits, ornamentals, and vegetables.

Lectures and recitations.

Practice work in the propagation of seedlings and the different forms of budding and grafting, layering, etc.

Text: Principles of Plant Culture, Goff.

22. Vegetable Gardening. (2-2).

A modification of course 202.

53. Tree and Vine Fruits. (3-2.)

A comprehensive study of the various kinds of fruit orchards and vineyards, embracing the problems of location and soils, protection from insects and diseases, pruning, cultivating, harvesting and marketing.

Lectures and recitations.

Text: Principles of Fruit Growing, Bailey.

Practical exercises in laying out orchards, spraying, pruning, etc.

Prerequisite: Horticulture 21.

55. Spraying. (1-2).

Same as course 301.

58. Nut Culture. (2-2).

A modification of course 304.

Prerequisite: Horticulture 21.

DEPARTMENT OF MATHEMATICS.

PROFESSOR PURYEAR, ASSOCIATE PROFESSOR R. F. SMITH, ASSISTANT PROFESSORS J. W. MITCHELL, MICHIE, GARNER, JONES, NICHOLS, BOND.

101, 102. Algebra. (3-0).

A rapid review of elementary topics, followed by the study of quadratic equations, the binomial theorem, variation, the progressions; complex numbers, theory of equations, logarithms, limits, undetermined coefficients.

Text: College Algebra, Rietz and Crathorne.

103. Plane Trigonometry. (3-0).

Goniometry, review of logarithms, solution of right triangles, problems of heights and distances, properties of triangles, solution of oblique triangles, geometrical applications.

Text: Plane and Spherical Trigonometry, Taylor and Puryear.

104. Analytics. (3-0).

The straight line, transformation of coordinates, circle, ellipse parabola, hyperbola, graphs of trigonometric, logarithmic and exponential functions, parametric equations, tangents.

Text: Analytic Geometry, Riggs.

Prerequisite: Mathematics 101, 103.

203, 204. Differential and Integral Calculus. (5-0, 3-0).

Differentiation, limits, infinitesimals, integration, maxima and minima, tangent and normal, areas, lengths, volumes, introduction to solid geometry, moment of inertia, center of gravity, radius of curvature, examples of differential equations.

Text: Calculus, March and Wolff. Supplementary exercises.

Prerequisite: Mathematics 104.

205. Differential and Integral Calculus. (5-0).

A modification of course 203, 204.

Prerequisite: Mathematics 104.

206. Trigonometry. (3-0).

Same as course 103.

17. Solid Geometry. (3-0).

Definitions, lines and planes in space, dihedral angles, polyhedral angles, polyhedrons, the cylinder, cone and sphere.

Text: Solid Geometry, Wentworth-Smith.

(Required as an extra study of Freshmen in the School of Engineering who do not present solid geometry for admission).

FOR STUDENTS IN SHORT COURSES.

13, 14. Shop Mathematics. (4-0, 3-0).

An elementary course in algebra, geometry and trigonometry, with special reference to practical applications to shop problems.

Text: Advanced Shop Mathematics, Norris and Craigo.

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR FERMIER, PROFESSOR H. E. SMITH, ASSISTANT PROFESSOR WIPPERMANN, MR. HERRINGTON, MR. CHAPELLE, MR. C. E. HANSON, MR. G. W. HANSON, MR. MARTINSON, MR. BOWERSOX, MR. STELZIG.

101, 102. Elementary Mechanics. (1-0).

The work of this course consists of lectures, quizzes, and problems involving those principles of mechanics which are more commonly used in all branches of engineering.

Each student is required to keep a note-book for the lecture notes and problems.

The second term's work must be preceded by Mathematics 103.

103. Carpentry. (0-3).

Shop practice in the use of the common bench tools and power machinery for working in wood, as applied to joinery, elements of construction, and cabinet making.

104. Forging. (0-3).

Shop practice in the use of blacksmith and general forge tools in the working of iron and steel. Also tempering, annealing, welding, case-hardening, etc.

NOTE.—Courses 103 and 104 together constitute a year's work, 3 hours a week. Freshmen in Courses III, IV, V, VI, and VIII will be divided into two groups at the beginning of the first term; one group will begin with course 103 and the other with course 104. At the beginning of the second term the groups will each change to the other work.

201. Pattern Making and Foundry Work. (0-4).

Shop practice in pattern making, molding, and casting in iron, brass, etc.

Prerequisite: Mechanical Engineering 103.

202. Pattern Making and Foundry Work. (0-4).

A continuation of course 201.

203. Principles of Manufacturing. (1-0).

This course consists of lectures and quizzes (1) on hand and power tools and machines for working wood and metals, their construction, care and operation; (2) on the technological properties of materials of shop manufacture; and (3) on processes of manufacture, and on the scientific management of shops from the production standpoint.

No text-book is required, but a note-book is required for the lectures.

205. Elementary Steam Engineering. (2-0).

This course aims to give the student such a knowledge of steam power plant equipment as will enable him to understand the operation of the same, and serve as a foundation for subsequent study and calculation along these lines. Valve gears, valve diagrams, and indicator practice are also included.

Text: Elementary Steam Engineering, Spangler.

Prerequisite: Mathematics 103, Mechanical Engineering 101, 102.

206. Elementary Steam Engineering. (3-0).

Same as course 205.

208. Kinematics. (3-0).

Without taking account of the strength of the structure, this course takes up the study of motion, velocity ratios, comparative forces, etc., in machines and their elemental parts.

Text: Mechanism, Keown.

Prerequisite: Mathematics 104 and Mechanical Engineering 205.

210. Kinematic Drawing. (0-3).

Practice in the construction of kinematic diagrams.

Must be accompanied by Mechanical Engineering 208.

Prerequisite: Drawing 201.

212. Engineering Mechanics. (2-0).

A study of pure mechanics as the foundation principles involved in the analytical solution of problems concerning the statics and dynamics of a material point and of a rigid body; with numerous numerical examples from practical engineering questions.

Text: Analytic Mechanics, Miller and Lilly.

Prerequisite: Mathematics 203, Mechanical Engineering 205.

Must be preceded or accompanied by Mathematics 204.

301. Steam Engines and Boilers. (2-0).

A study of fuels; combustion; the generation of steam; the construction, operation, care, design and testing of boilers of various types, together with the design of chimneys and other means of producing draft.

Text: Steam Boilers, Parsons.

Prerequisite: Mathematics 204, Chemistry 101, 102, Physics 201, 202, Mechanical Engineering 205, 208.

302. Steam Engines and Boilers. (3-0).

A study of the elementary thermodynamics of heat engines; also the mechanics, construction, design, operation and testing of the steam engine. Valve gears, indicators, governors, etc., are also studied.

Text: Steam Engines, Creighton.

Prerequisite: Mechanical Engineering 301.

303, 304. Machine Design. (0-5).

This course consists of practice in the design of machine elements, and their proper representation by finished shop drawings.

Text: No text will be required, but each student is urged to secure a Marks' hand-book.

Prerequisite: Mathematics 204, Mechanical Engineering 212; must also be preceded or accompanied by Civil Engineering 305 and Mechanical Engineering 313.

305. Elementary Steam Engineering. (2-0).

Same as course 205.

307. Kinematics. (3-0).

Same as course 208.

309. Machine Shop. (0-6).

Practice in bench and machine tool work in metals. This includes chipping, scraping, filing, babbiting, pipe fitting, drilling, turning, boring, grinding, milling machine work, etc.

Prerequisite: Mechanical Engineering 103, 104, 201.

310. Machine Shop. (0-5).

A continuation of course 309.

313. Engineering Mechanics. (3-0).

A continuation of course 212, with special reference to dynamics of rotation, work, energy, friction, impact, etc.

315. Engineering Laboratory. (0-3).

A modification of course 403, 404.

317. Engineering Mechanics. (4-0).

A modification of courses 212, 313.

321. Machine Shop. (0-6).

A modification of course 309.

401, 402. Engineering Design. (0-4).

A study of the design of engines, pumping machinery, etc., from the standpoint of their strength, speed regulation, construction, and economical performance; also a study of the design of power plants, as to capacities and arrangements.

Text: No text-book is required, but the student must have a Marks' hand-book, and a slide rule.

Prerequisite: Mechanical Engineering 301, 302, 303, 304.

403, 404. Engineering Laboratory. (0-6, 0-4).

Instruction and practice in testing gauges, indicators, fans, pumps, boilers, engines, etc.; also a study of the actual mechanical operation of various machines.

In addition to the work with the apparatus, the student will be expected to make calculations and written reports on the investigations and the results obtained.

Text: Power Plant Testing, Moyer.

Prerequisite: Mechanical Engineering 301, 302.

Prerequisite for abridged courses: Mechanical Engineering 205, 206, or 305.

405, 406. Engineering Design. (3-0).

Drawing room practice in the design of machines and power plants.
Text: Steam Power Plants, Gebhardt.
Prerequisite: Mechanical Engineering 301, 302.

407, 408. Thermodynamics. (4-0, 2-0).

This course embraces a study of the effects of heat upon gases, and the application of thermodynamic laws and principles to the steam engine, gas engine, hot-air engine, injectors, calorimeters, etc., together with a study of heat efficiencis of these machines and instruments.
Text: Applied Thermodynamics for Engineers, Ellis.
Prerequisite: Mechanical Engineering 301, 302.
Must be accompanied or preceded by Mechanical Engineering 401, 403.

410. Gas Engines. (2-0).

The application of the principles of thermodynamics to the design of gas engines. Also the study of the different cycles, methods of governing, and some details of construction, operation and care of various types of gas engines and other internal combustion motors.
Text: Internal Combustion Engines, Streeter.
Prerequisite: Mechanical Engineering 407, 408.

415, 416. Engineering Laboratory. (0-2, 0-3).

A modification of course 403, 404.

417. Carpentry. (0-4).

The same as course 103, and serving as a foundation for course 418.

418. Manual Training Woodwork. (1-4).

A study of manual training, embracing a brief history, purposes, scope, methods of teaching, outlines of courses for the grammar school and for the high school; selection, installation and care of equipment and supplies, etc. The work will be given to the student in the form of lectures, and he will be required to present written reports on problems assigned, and to stand written and oral tests.

The practice will embrace bench work in wood and wood turning, consisting chiefly of exercises selected from proposed courses for the grammar school and for the high school.

FOR STUDENTS IN SHORT COURSES.

23. Carpentry. (0-4).

A modification of course 103.

24. Forging. (0-4).

A modification of course 104.

25. Forging. (0-4).

Same as course 24.

31, 32. Elementary Mechanics. (2-0).

A simplified modification of courses 101 and 102.

37, 38. Shop Work. (0-4).

This course includes practice in bench work in wood, and a limited amount of forging. It is planned with a view of being helpful to those students who expect to live on the farm after leaving College.

42. Machine Shop. (0-6).

A modification of course 309, 310.

45, 46. Steam Engines and Boilers. (3-0).

A modification of course 301, with no prerequisite except entrance requirements.

47. Pattern Making and Foundry. (0-4).

A modification of course 201, 202.

51, 52. Elementary Mechanics. (2-0).

A modification of course 101, 102.

53, 54. Technical Literature. (2-0).

A study of magazines and papers covering the field of technical work, with special reference to current literature of mechanical engineering.

55, 56. General Mechanical Engineering. (3-0).

A study of steam power plant equipment, including steam turbines, compound engines, auxiliaries, etc., and the general planning and arrangement of power plant equipment.

57. Internal Combustion Engines. (3-0).

In this course the student will study gas producers, and the various internal combustion motors, with special reference to their efficient performance and their troubles.

58. Refrigeration. (2-0).

A practical study of refrigerating methods and machines.

59, 60. Machine Design. (2-4).

A study of the materials of machines, elements of strength and materials, elements of mechanism, principles of lubrication, commercial standards of machine supplies and parts. Also a study of the application of these to the design of machine elements and machines.

Students will be given problems involving the principles taught in the class-room, and will be required to make the calculations necessary for the design of machine elements or parts.

The student will also be given practice in the correct representation of the part designed by making working drawings of the parts and machines. So far as practicable, opportunity will also be given the student to make tracings and blueprints.

61. *Machine Shop.* *(0-4).*

A continuation of course 42.

62. *Machine Shop.* *(0-3).*

A continuation of course 61, including tool-making and tool-dressing.

63, 64. *Engineering Laboratory.* *(0-3).*

A modification of course 403, 404.
Prerequisite: Mechanical Engineering 45, 46.

68. *Power Plants.* *(0-4).*

In this course the student will be required to serve as helper in the College power plant at duties which will give him an experience with practical power plant operation.

69. *Forging.* *(0-4).*

Same as course 24.

70. *Power Plants.* *(0-2).*

A modification of course 68.

75, 76. *Steam Engines and Boilers.* *(4-0).*

Same as course 45, 46.

77. *Pattern Making and Foundry Work.* *(0-4).*

Same as course 41.

78. *Machine Shop.* *(0-4).*

A modification of course 309.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

Captian C. H. Mueller, U. S. Cavalry; Lieutenant Wm. H. H. Morris, U. S. Infantry.

101. (*1-2*).

(a) Theoretical: Theory of target practice, individual and collective; military organization; map reading; service of security; personal hygiene.

(b) Practical: Physical drill; Infantry drill; School of the Soldier, squad and company in close extended; preliminary instruction, sighting, position and aiming drills, gallery practice nomenclature and care of rifle and equipment.

102. (*1-2*).

(a) Theoretical: Lectures on military policy as shown by military history of United States, and military obligation of citizenship; service of information; combat; infantry drill regulation, to include School of the Company; camp sanitation for small command.

(b) Practical: Physical drill; infantry drill; School of Battalion, ceremonies; manuals, bayonet combat; entrenchment; first aid instruction; range and gallery practice.

201. (*1-2*).

(a) Theoretical: Infantry drill regulation to include School of Battalion and Combat: Small Arms Firing Regulations; lectures as in 102 (b); map reading; camp sanitation and camping expedients.

(b) Practical: The same as course 102 (a); combat firing.

202.

(a) Theoretical: Lectures on recent military history; service of information and securities; marches and camping.

(b) Practical: The same as course 102 (a): signaling; semaphore and first aid; sand table work; range practice.

302. (*3-2*).

(a) Theoretical: Minor tactics; field orders; map maneuvers. Company Administration, general principles, papers and returns; Military History.

(b) Duties consistent with rank of cadet officers or non-commissioned officers in connection with courses 101, 102, 201 and 203; military sketching.

302. (*3-2*).

(a) Theoretical: Minor tactics; map maneuvers continued; elements of international law; property accountability and method of obtaining supplies and equipments.

(b) Practical: Same as course 301 (a).

401. *(3-2).*

(a) Theoretical: Tactical problems; map maneuvers; proceedings of court martial; international relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation and treaties. Psychology of war and kindred subjects; general principles of strategy to show relations between the statesman and the soldier.

(b) Practical: Same as course 301 (b).

402. *(3-2).*

(a) Theoretical: Tactical problems; map maneuvers; rifle in war. Lectures on Military History and policy.

(b) Practical: Same as course 301 (b).

DEPARTMENT OF MODERN LANGUAGES.

PROFESSOR CAMPBELL, DR. SPARKMAN.

In beginning courses a thorough drill in pronunciation, the essentials of grammar, and colloquial exercises, is given through daily oral and written exercises. The reading of simple texts is taken up as early as possible.

The work of the advanced courses consists in the reading of selected texts and magazines, with incidental grammar review and drill in the use of colloquial idioms. Short dictation exercises are frequently given. Special stress is laid upon sight reading. Parallel reading of from 150 to 300 pages of selected prose works is required. In French and German, the reading is gradually adapted to the scientific work of other departments; the texts read in Spanish will be literary and commercial. Two years of German is required in Course X. In all other courses work in modern language is elective, as shown under the several curricula.

211, 212. French. (3-0).

Grammar and easy reading.

213, 214. German. (3-0).

Grammar and easy reading.

215, 216. Spanish. (3-0).

Grammar and easy reading.

321, 322. French. (*3-0*).

Reading of scientific and other texts. Parallel reading.

323, 324. German. (*3-0*).

Reading of scientific and other texts. Parallel reading.

325, 326. Spanish. (*3-0*).

Reading of technical and commercial texts; business correspondence. Parallel reading.

The following courses are the same, respectively, as those set next to them in parenthesis:

311, 312, (211, 212); 313, 314 (213, 214); 315, 316, (215, 216); 421, 422, (321, 322); 423, 424, (323, 324); 425, 426, (325, 326).

DEPARTMENT OF PATHOLOGY.

ASSISTANT PROFESSOR WHITNEY.

242. General Pathology. (*3-2*).

This course deals with the elementary processes of disease, and their causes, including a study of the gross and minute appearance of the diseased tissues. Such disease processes as inflammation, gangrene, necrosis, atrophy, hypertrophy, ulceration; the various degenerations, infiltrations, pigmentations and tumor formations, will be considered. Practice work in addition to the microscopic study of the above pathological processes will include instruction in laboratory technique.

Texts: Text-book of Comparative General Pathology, Kitt; Pathological Technique, Mallory and Wright.

Must be accompanied by Antomy 202.

DEPARTMENT OF PHYSICS.

PROFESSOR SILVEY, ASSISTANT PROFESSORS MCPHEETERS, SKEELER,
MR. MCADAMS, MR. BATES.

101, 102. Principles. (*2-2*).

This course includes the mechanics of solids, liquids, and gases; and the phenomena of heat, light, current electricity and magnetism. Instruction is given by recitations, quizzes, problems, and demonstrated lectures. The subject is treated primarily as a pure science, secondarily as a basis for the agricultural courses. Emphasis is laid upon the fundamental physical principles rather than upon the mathematical processes involved.

The practice includes about 30 experiments in the subjects named above.

Text: Kimball's College Physics.

Prerequisite: Students admitted to the Freshman class conditionally and not presenting physics for entrance will not be admitted to this course. See Entrance Requirements and Physics 11, 12.

101a, 102a. Principles. (*3-2*).

A modification of course 101, 102.

103, 104. College Physics. (*3-2*).

A general college course in Physics for students in general Science, and those preparing to enter a medical school.

Prerequisite: See courses 101 and 102.

203, 204. General. (*3-2, 3-4*).

A general course in mechanics, heat, light, electricity and magnetism for engineering students.

In this course, particular stress is laid on the derivation of the various formulas necessary for a thorough understanding of the mathematical relations existing in physical determinations. Much emphasis is placed on practical problems furnished by the instructors.

The practice includes about 45 experiments in the subjects named above. The work is, in general, quantitative.

Text: Reed and Guthe's College Physics.

Prerequisite: Mathematics 101, 103. (See Entrance Requirements).

207, 208. General. (*2-2*).

This course is identical with course 203, 204, with the omission of electricity and magnetism.

Prerequisite: Mathematics 101, 103. (See Entrance Requirements).

FOR STUDENTS IN SHORT COURSES.

11, 12. Elementary. (*3-4*).

Lectures, recitations, problems, and demonstrations in elementary mechanics, heat, sound, light, electricity and magnetism. The nature of the theory is indicated by the outline of the practice.

The practice includes measurements of precision with vernier and micrometer calipers and balances; curve plotting; accurate determinations of length, volumes, densities, forces, moments, stress, expansion, heat exchange; refraction and reflection of light by various forms of lenses and mirrors; velocity of sound and the laws of vibrating strings; measurements of voltage, current, and resistance.

Multiple sets of apparatus permit laboratory experiments to be run parallel to the lectures and recitations.

Text: Carhart and Chute's First Principles of Physics.

(See Entrance Requirements).

DEPARTMENT OF PHYSIOLOGY AND PHARMACOLOGY.

ASSISTANT PROFESSOR WRIGHT.

PHYSIOLOGY.

121. Physiology of the Domestic Animals. (*3-2*).

Lectures on the Physiology of Nutrition and Secretion, and practice in the laboratory examining natural and artificial digestive juices, ferments, milk, urine, etc.

Text: Veterinary Physiology, Smith.

122. Physiology of the Domestic Animals. (*3-2*).

Lectures on the Physiology of the Muscular, Nervous, Respiratory and Circulatory Systems; accompanied by laboratory practice in which the student will obtain graphic records of these phenomena.

Text: Veterinary Physiology, Smith.

PHARMACOLOGY.

231. Inorganic Drugs. (*3-0*).

This course covers the preliminary work in Pharmacology. First it takes up the definitions, terminology, modes of administration and psosology of drugs. This is followed by a study of the derivations, actions, uses, etc., of the inorganic medicines.

Text: To be assigned.

DEPARTMENT OF TEXTILE ENGINEERING.

PROFESSOR BAGLEY, ASSOCIATE PROFESSOR TATUM.

201, 202. Designing. (*3-2, 3-0*).

This course includes the classification of fabrics; the elementary principles of fabric structure; the explanation of various technical terms applied to designs and fabrics; the representation of drawing-in drafts and harness chains; the design of fancy shirting, madrases, and dress goods, etc.

301, 302. Yarn Manufacture. (*4-0, 2-0*).

Recitations on the machinery and processes in the manufacture of coarse cotton yarns. Instruction is given with a view of imparting a general knowledge of the machinery and processes, including the study of the raw material; mixing; mixing machinery; construction and operation of feeder and picking machinery, carding, drawing, slubbing, roving, ring spinning, spooling, reeling, and twisting; calculations to determine the necessary gearing to produce given numbers, speeds and production.

Text: Cotton Mill Processes and Calculations, Tomkins.
International Library of Technology, Vol. 76.

303, 304. Designing. (3-0).

The design of lenos; two and three-ply fabrics; Jacquard designing, including the production of original designs, card cutting and lacing.
Prerequisite: Textile Engineering 201, 202.

305, 306. Power Weaving. (3-2, 3-3).

Recitations and lectures on the construction, operation and adjustment of the plain and fancy looms; a study of the timing and setting of the various parts, and weave room calculations.
Text: International Library of Technology, Vol. 80.

307. Fabric Analysis. (1-0).

Dissection of small samples of fabrics with a view of their reproduction.
Prerequisite: Textile Engineering 201, 202.

317. Cotton Classing. (0-2).

The course covers the handling of the crop from the field to the mill; the method of establishing classes for cotton and their values, and practice in judging the value of samples.

401, 402. Yarn Manufacture. (3-4).

Recitations and lectures; a continuation and more exhaustive treatment of the subjects of course 301, 302. In addition, the study of warp preparation and of the machinery necessary for the manufacture of fine cotton yarns, including the sliver lap machine, ribbon lap machine and comber, and a study of the spinning mule, organizations for the manufacture of all classes of yarns and the preparation of fancy warps.
Text: International Library of Technology, Vol. 77.
Prerequisite: Textile Engineering 301, 302.

404. Fabric Analysis. (1-0).

A continuation of 307.
Prerequisite: Textile Engineering 307.

405, 406. Sizing. (3-0).

This course includes a thorough study of all materials used in sizing cotton yarns. The best methods of testing for adulterants commonly found in these materials are given, as is also the most modern methods of their application to the yarns. The machinery and its operation is carefully studied.
Text: Chemistry and Practice of Sizing, Bean.

407, 408. Weaving. (3-4).

Recitations and lectures on the construction, operation and adjustment of leno and Jacquard machines. A study of the different "tie-ups" used in Jacquard weaving. Sketching the most important motions on automatic and dobby looms.

Prerequisite: Textile Engineering 305, 306.

410. Mill Management. (3-0).

Lectures and recitations on the general management of cotton mills, including the study of fire protection, cost of production in the various departments, labor conditions and wages, care of mill and mill village.

Text: International Library of Technology, Vol. 78; Cotton Mill Commercial Features, Tompkins.

412. Magazine Review. (1-0).

Students will report in class on articles assigned them in the textile magazines.

413. Cotton Classing. (2-2).

Recitation and lecture on classification and stapling of cotton, buying spot cotton, papers used in the cotton trade, and cotton exchanges.

Text: Cotton Trade Guide and Student's Manual, Miller.

417. Cotton Classing. (0-2).

Same as course 317.

FOR STUDENTS IN SHORT COURSES.

11, 12. Designing. (3-0).

A modification of course 201, 202.

13, 14. Yarn Manufacture. (3-2, 3-4).

A modification of course 301, 302.

15, 16. Weaving. (3-4, 3-2).

A modification of course 305, 306.

17. Cotton Classing. (0-2).

Same as course 317.

51, 52. Yarn Manufacture. (3-4).

A modification of course 401, 402.

53, 54. Designing. (3-0).

A modification of course 303, 304.

55, 56. Weaving. (3-4).

A modification of course 407, 408.

57, 58. *Fabric Analysis.* (*1-0*).

Dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, cutting cards from original designs.

60. *Mill Management.* (*2-0*).

A modification of course 410.

DEPARTMENT OF VETERINARY ANATOMY.

PROFESSOR FRANCIS.

111. *Anatomy of the Horse.* (*3-6*).

This will embrace a careful study of the bones, joints, and muscles. Text: Anatomy of Domestic Animals, Sisson.

112. *Anatomy of the Horse.* (*2-4*).

During this term the thoracic and abdominal viscera will be studied. Text: Anatomy of Domestic Animals, Sisson.

201. *Anatomy and Physiology of Domestic Animals.* (*2-2*).

This course is intended as an introduction to the study of Veterinary Medicine. It treats the fundamental processes of animal nutrition in detail, so that each student may be prepared to meet the problems that arise in the economic production of beef, pork, and dairy products.

Reference books: Physiology of Domestic Animals, Smith; Veterinary Anatomy, Sisson.

211. *Anatomy of the Horse.* (*3-6*).

This will include a dissection of the circulatory system, the nervous system and the organs of special sense.

Text: Anatomy of Domestic Animals, Sisson.

212. *Histology and Embryology.* (*3-4*).

A lecture and laboratory course.

Texts: Normal Histology, Piersol; Embryology of the Chick and Pig, Prentiss.

FOR STUDENTS IN SHORT COURSES.

12. *Animal Diseases.* (*3-2*).

A popular course on the common diseases of animals on the farm. Text: The Horse in Health and Disease, Hadley.

DEPARTMENT OF VETERINARY MEDICINE AND SURGERY.

PROFESSOR MARSTELLER, ASSOCIATE PROFESSOR DUNN, ASSISTANT PROFESSOR BETHELL.

VETERINARY MEDICINE.

202. Non-infectious Diseases. (2-2).

A discussion of diseases of locomotion, digestion, respiration, etc., of a non-contagious nature.
Text: Veterinary Medicine, Vols. 1, 2, 3, 4, 5, Law.
Prerequisite: Veterinary Anatomy 201.

401. Infectious Diseases. (2-0).

This lecture course will embrace a discussion of such diseases as anthrax, black leg, rabies, glanders, hog cholera, tuberculosis, Texas fever, infectious anemia, and their remedies. Especial mention will be made of those which may be injurious to public health through the consumption of meats or milk. Students have abundant opportunity to see hogs treated for cholera, and cattle for Texas fever.
Text: Pathology of Infectious Diseases of Animals, Moore.
Prerequisite: Biology 205, Veterinary Medicine 202.

SURGERY.

302. Obstetrics. (2-2).

A study of the reproduction of animals. During the consideration of the subject, many points on embryology, barrenness, artificial breeding, castration of males and females, are brought out.
Text: Veterinary Obstetrics, Williams.
Practice will embrace a dissection of the reproductive organs, and following this are frequent opportunities for observing diseases and irregularities incident to reproduction.
Prerequisite: Veterinary Medicine 202.

402. Obstetrics. (2-2).

Same as course 302.

SUMMER SESSION.

GENERAL STATEMENT.

The summer session of the Agricultural and Mechanical College of Texas has been established for the following well defined purposes:

1. To provide courses of instruction in agriculture, domestic economy, manual training, cotton classing, rural sanitation and rural sociology. for the benefit of teachers, rural ministers, farmers, farm women

and others who may be interested in any phase of agricultural or rural development.

2. To offer to young men having sufficient preparation the opportunity of taking courses for college credit, and also to permit students of the College to remove deficiencies or to pursue further courses toward graduation.

3. To provide instruction for young men who need to review or to take additional work as a preparation for examinations to enter this College.

4. To provide instruction in the various subjects required for State teachers' certificates.

ORGANIZATION.

The work of the summer session will be given in five divisions as outlined below:

1. *The Rural Life School.* (*Six weeks*).

The work of this division will be given largely by the regular teaching staff of the College, and will include courses in agricultural education, agricultural engineering, agronomy, animal husbandry, dairying, rural home economics, horticulture, farm forging, cotton classing, military science, highway engineering, and the organization and teaching of athletics in secondary schools.

These courses are so planned as to be of special interest to teachers as well as to furnish valuable training for persons not intending to teach. Teachers of agriculture and domestic economy in secondary and rural schools will find in this division opportunities for extending their knowledge of these subjects that are unequalled elsewhere in the State. Not only will the student have at his command all of the regular teaching equipment and facilities of the College, but to this will be added the opportunity for contact with the research work of the Experiment Station, particularly along the lines of soil fertility, crop production, horticulture, dairying and live stock feeding, breeding and management.

2. *The Summer Normal.* (*Six weeks*).

In this division the subjects required for all the grades of teachers' certificates will be offered, including primary methods.

Instruction will be given by successful school superintendents, assisted by members of the regular teaching staff of the College.

The Summer Normal is organized under the authority of the State Superintendent of Public Instruction. The instruction in the subjects required for teachers' certificates will conform to the outlines, recommended text-books, laboratory requirements, etc., of the State Superintendent of Public Instruction. The final examinations will be held on the official dates as authorized by the State Department of Education.

The College offers unusual advantages to teachers who desire not only to build to State certificates of higher grades, but to increase their professional attainments by taking college courses not included in the Normal division.

3. *The College.* (*Eight weeks*).

In this division courses carrying college credit will be offered for the benefit of students who desire to make up deficiencies or to take additional work toward graduation and for others who desire college credit. This division will also provide instruction for young men who need to review or to take additional work as a preparation for examinations to enter this College.

Courses carrying college credit will be offered by the following departments: Agricultural Education, Agronomy, Animal Husbandry, Architecture, Biology, Chemistry, Civil Engineering, Dairying, Drawing, Economics, English, Entomology, Horticulture, Mathematics, Modern Languages, Physics.

The following subjects for entrance credit will be offered: Elementary Agriculture, Mechanical Drawing, Freehand Drawing, English (composition and classics), Civics, United States History, Ancient History, Medieval and Modern History, English History, Plane Geometry, Algebra.

The right is reserved to withdraw any course for which less than five students register.

4. *The School of Cotton Classing.* (*Six weeks*).

The object of the School of Cotton Classing is to prepare young men for cotton buying and the managing of cotton warehouses, and to offer to farmers the opportunity to increase their knowledge of the leading farm product of Texas.

A study is made of the elements which determine the commercial grades of cotton; the influences which affect the price of cotton; the system of financing the crop from field to factory, and the relation of exchanges to the business in general. New samples are put each day on the cotton tables for practice and the work is patterned somewhat after that of a cotton office.

Special attention will be paid to the staple of cotton and an expert in this branch will give instruction in this subject. Many samples of various lengths of staple will be provided for students taking up this branch of the work.

The government standards for classing cotton, which have been adopted by nearly all the leading exchanges, with the exception of New York, will be used.

5. *Farmers' Short Course.* (*One week*).

This course is planned to meet the needs of practical farmers, business men and women who desire to farm on a better basis, to make farming more profitable, and to make farm life more comfortable and attractive. The work will be given in three subdivisions, as follows:

Agriculture—Separate courses will be offered in the following departments: Agricultural Engineering, Agronomy, Animal Husbandry, Dairy Husbandry, Horticulture, Poultry, Plant Diseases and Insects, Veterinary Medicine.

Home Economics—The work in home economics will be especially adapted to the needs of girls and women from rural communities. The work will consist of lectures and demonstrations in cooking, canning, basket making and household art.

Agricultural Education—This work will be designed especially to meet the needs of the public school teachers of the State who are teaching agriculture.

The teaching staff of the Farmers' Short Course will be composed of officers from the teaching division, the Experiment Station and Extension Service of the College. In addition there will be several speakers of national reputation.

ADMISSION REQUIREMENTS.

In the College division the courses will be offered subject to the same general requirements as in the regular session.

There are no fixed requirements for admission to the Rural Life School, the School of Cotton Classing, or the Farmers' Short Course. Applicants for Summer Normal certificates must meet the legal requirements with reference to age.

For bulletin giving detailed information concerning the summer session, address

THE REGISTRAR,
College Station, Texas.

THE TEXAS AGRICULTURAL EXPERIMENT STATION.

B. YOUNGBLOOD, DIRECTOR.

The Texas Agricultural Experiment Station is one of the four major divisions of the Agricultural and Mechanical College of Texas. Its function is the investigation of agricultural problems. It consists of a central station at College Station and thirteen substations, located in various sections of the State, as follows: Angleton, Beaumont, Beeville, Chillicothe, Denton, Lubbock, College Station, Nacogdoches, Pecos, Spur, Temple, Troup, and near Sonora. These substations are used in extending the work of the Main Station, so that State-wide information upon the various problems may be secured. The Experiment Station system is at the present time supported by $30,000 Federal and $135,000 State money per annum.

The work of the Station comprises the investigation of the more important problems of veterinary science, chemistry, horticulture, animal husbandry, entomology, agronomy, plant pathology and physiology, poultry husbandry, forestry, plant breeding, and dairy husbandry, and the Feed Control Service.

The Station is a valuable source of information for students of agriculture and the farmers of the State. It is looked to for the facts by the School of Agriculture, the Extension Service, and other agencies for the dissemination of agricultural information. The work of the Main Station and of the feeding and breeding substation at College Station presents to students very unusual opportunities, both in theoretical instruction and practical experience.

The work of the Station by divisions is as follows:

DIVISION OF VETERINARY SCIENCE.

The Division of Veterinary Science has done much valuable work on "Texas Fever" or tick fever of cattle, and is engaged in a further study of this problem and means of controlling it. This work has resulted in reducing the death rate from about 98 per cent to 2 per cent. Other important investigations are being pursued. Probably the most important of these investigations is that of *Infectious anaemia,* an obscure, fatal disease of horses and mules, which causes a tremendous annual loss to the farmers and stockmen of the State. In addition, other studies of diseases affecting farm animals are being made, including "big head" of sheep and goats, contagious abortion of dairy cattle, garget, and so forth.

During the past year this Division has undertaken investigations of various diseases that affect the sheep and goat industries of the State.

DIVISION OF CHEMISTRY.

The Division of Chemistry conducts investigations of composition of Texas soils, the composition and digestibility of feeding stuffs and important work with fertilizers. Other lines of work being pursued include the study of irrigation water; the composition of paints; the composition, properties, utilization and preservation of human food; composition and utilization of plants and plant products; nutritive value of feeds; and pot experiments with phosphoric acid, potash and nitrogen of the soils.

By the terms of the State law, the Chemist in Charge of the Division of Chemistry of the Experiment Station is also State Chemist, and as such is charged with the enforcement and administration of the State fertilizer control law. This work has been conducted very successfully in addition to the regular duties of the Chemist.

DIVISION OF HORTICULTURE.

The Division of Horticulture is conducting plant breeding work with dewberries, blackberries, raspberries and other members of the *Rubus* family. Crown Gall of orchard trees is being studied with a view to finding methods of control.

The Division is conducting experiments with peach trees in which the longevity of various varieties of peaches is being studed. Experiments are also being made for the purpose of comparing European and

American varieties of grapes grafted onto native American stock with a view to securing a domestic grape more suitable to Texas conditions.

Arboreta experiments are being conducted in which the various oaks, willows, poplars, and a larger number of evergreens are being tested out with a view to determining regional adaptation for various sections of Texas. Under a cooperative arrangement with the Office of Foreign Seed and Plant Introduction of Washington, D. C., a large number of rare invaluable plants are being secured from foreign countries.

In addition to the foregoing well defined fruit and vegetable experiments are conducted at each of the substation experiment farms.

DIVISION OF ANIMAL HUSBANDRY.

The Division of Animal Husbandry conducts feeding and breeding investigations of vast importance to Texas agriculture. The work of this division in proving that silage is the most economical roughage for fattening beef cattle alone has proved to be worth many thousands of dollars annually to the feeders of Texas. The results secured in this work and reported in bulletins, are well known to the stockmen and farmers of the State.

Considerable animal breeding work is being conducted by this division. In sheep breeding crosses have been made of the Karakule with the more common breeds, with a view to studying inheritance problems and at the same time producing a more desirable type of mutton and fur-bearing sheep adapted to Texas conditions. Considerable work has been done in fattening lambs under ranch conditions. This work has been reported upon in bulletin form. The sheep breeding and feeding work is conducted at Substation No. 7, Spur, and Substation No. 14, near Sonora.

The swine work is progressing rapidly. A good foundation herd was first secured, and then investigations were begun with a view to determining the most economical pasture for hogs and also the most economical rations for brood sows, young growing hogs, and porkers. Some results of value have been secured, and are now available in bulletin form, including the value of peanut meal as a feed for hogs. Experiments are being conducted to determine the best practices with reference to the feeding of cottonseed meal to hogs of various ages. Other work with swine which will have an important bearing upon the swine industry of the State will be taken up just as fast as facilities are secured for the purpose.

Investigations that will have a definite bearing upon the goat industry of the State are now under way, and with the establishment of a substation in the goat and sheep region of the State this work will no doubt progress very rapidly. The goat industry of the State is an important factor in the live stock growing phase of Texas agriculture, and benefits arising from this work will have a far-reaching effect. Considerable work has already been done with Angoras and the work is being continued.

DIVISION OF ENTOMOLOGY.

The Division of Entomology is making a study of problems affecting the beekeeping industry of the State, and bulletins of popular interest have been issued upon this subject. The life-history of the wax-moth has been determined and reported, and methods of control worked out. Investigations have been made and results reported in bulletin form upon the development and control of the turnip louse, the Harlequin cabbage bug, weevils injurious to peas, beans, and so forth; work has been done on the prevalence of the green bug or spring grain aphis, in cooperation with the College, and published; a very comprehensive bulletin on sprays and spraying has been issued. Important investigations relating to insects and their control are being continued and will be reported upon from time to time.

The Entomologist in Charge of the Division of Entomology is named by the law as State Entomologist, and as such has charge of the foul brood eradication work of the State. Rules and regulations have been issued, and this work is well in hand, under the direction of the entomologist and his corps of inspectors.

DIVISION OF AGRONOMY.

The Division of Agronomy is conducting investigations with farm crops and soil improvement. Under farm crops studies particular attention has been given to variety tests of corn and the improvement of the crop by securing pedigreed strains. Additional work with corn has been conducted with seeding rates and the effect of distribution of hills upon yield. A study of oats is being made, dealing particularly with the purification of certain types of Red Rust Proof and the improvement of these types by individual selection. The legume work consists largely of variety tests of cowpeas, soybeans and peanuts for hay and seed production. Permanent pasture studies are being made. Under soil improvement studies are being made of crop rotations versus continuous cropping, and of cultural methods and agronomic fertilizer work.

Investigations are planned on a project basis and include all substations situated in agricultural regions suited for the study of the problem, hence, a project may be under study at the Main Station and also at several substations, or only at certain substations. The projects in operation at this time include crop varieties; crop improvement investigations; crop productions studies, including rate of seeding, date of seeding, distribution of seeding, and time of thinning; kafir breeding and type study; plant introduction test; rice irrigation experiments; dry farming, moisture and fertility conservation experiments; time, manner and depth of plowing experiments; frequency of intertillage experiments; crop rotation experiments.

Much progress has been made in each of these lines of investigation and many data are now on file, which will be drawn upon in the preparation of station bulletins reporting results.

DIVISION OF PLANT PATHOLOGY AND PHYSIOLOGY.

The Division of Plant Pathology and Physiology is conducting investigations into the pink rot of onions, the cotton root rot, smut mold of Indian corn, diseases of the sweet potato and the various melon crops. Under each of these studies efforts are being made to determine methods of control.

This Division is coöperating with the Bureau of Plant Industry of the United States Department of Agriculture, Washington, D. C., in making a plant disease survey of Texas.

DIVISION OF POULTRY HUSBANDRY.

The Division of Poultry Husbandry is a newly organized division of Station effort. Four poultry houses, an incubator house and a number of pens have been constructed, and feeding work begun. The flock has been increased from 150 hens, last year, to more thon 2500 fowls at the present time. White Leghorns have been used in the poultry work because of their special fitness. Other breeds will be added as from time to time facilities permit.

DIVISION OF FORESTRY.

Coincident with the creation of the office of State Forester there was created a Division of Forestry on the Station. The new forester plans to begin his work in connection with the Station by the establishment of nurseries and arboreta at the various substations, for the introduction of promising forest trees.

DIVISION OF PLANT BREEDING.

The Division of Plant Breeding, while comparatively new, has under way work of considerable importance to the State. The original research into the problems of inheritance in cotton is being carried in this Division and much valuable information is being secured. Other studies relating to plant breeding are being planned for this Division. A small cotton laboratory has been erected on the farm and the testing of lint and fiber will be done in this laboratory. The work of this Division will, no doubt, yield results of unusual importance to the farmers of Texas.

DIVISION OF DAIRYING.

The Division of Dairying is the newest one on the Station, having been established in July of 1916. A model dairy barn has been constructed and a foundation herd of Jersey cows secured. Dairy feeding and breeding investigations that will have an important bearing on the dairy industry of the State are being taken up. Special attention will be paid to milk production and herd improvement and similar problems.

FEED CONTROL SERVICE.

The Director of the Experiment Station is the official charged with the enforcement of the State pure feed law, which he does through the Division of Feed Control Service.

SUBSTATIONS.

In addition to the Main Station, the State owns and operates a system of substations, consisting of thirteen experiment farms. As their name implies, they are subordinate to and a part of the Main Station. In the location of these substations due regard has been given to the need of outlying work within the several agricultural regions of the State. These substations are located as follows:

No. 1, at Beeville, in Bee County, established originally for truck farming experiments, but modified in later years to include work in general agriculture.

No. 2, near Troup, in Smith County, established primarily as a fruit substation.

No. 3, near Angleton, in Brazoria County, where crop production problems are studied in connection with poor drainage conditions.

No. 4, near Beaumont, in Jefferson County, which is primarily a rice substation, though the work has been extended to include problems pertaining to general farming.

No. 5, near Temple, in Bell County, where crop production and plant introduction, under cotton root rot conditions, are being studied.

No. 6, near Denton, in Denton County, was originally a small grain substation, but the work has been extended to cover the various farm problems of the section.

No. 7, near Spur, in Dickens County, was located in a ranching section because of the possibilities for dry-land farming In addition to the agronomic work there, we are at the present time conducting some important sheep breeding and feeding experiments on this substation.

No. 8 was located at Lubbock, in Lubbock County, with a view to introducing a sufficiency of plants to give the farmer an adequate number of field crops, fruits, vegetables, and money crops, to make agriculture in that section both pleasant and profitable, in the face of dry-land conditions.

No. 9, near Pecos, in Reeves County, was located upon a gypsum soil, where irrigation must be practiced.

No. 10, the feeding and breeding station, was located at College Station in order to have the investigations in feeding and breeding as close as possible to the College. Students benefit directly from this work.

No. 11, near Nacogdoches, in Nacogdoches County, was located primarily for the purpose of studying the tobacco industry in Eastern Texas. The work, however, has been elaborated upon sufficiently to cover the leading farm problems of the section.

No. 12, at Chillicothe, in Hardeman County, is operated cooperatively with the United States Department of Agriculture, and was established for the purpose of introducing and improving dry-land grains and forages for the semi-arid sections of the State.

No. 14. The Thirty-fourth Legislature established a special goat and sheep breeding and feeding station in the Angora goat and sheep raising section of Southwest Texas. This substation is located near Sonora, on a line between Edwards and Sutton Counties and has been designated as Substation No. 14. The work of developing this substation is now under way.

COOPERATION.

In accordance with the Station's fixed policy of cooperating wherever cooperation is mutually advantageous, the following memoranda of cooperation have been continued:

1. With the Office of Dry-land Seed Distribution, United States Department of Agriculture, for cooperative work in the dissemination of seeds of dry-land crops suitable to Texas conditions. Under this arrangement large quantities of valuable seeds have been placed with Texas farmers.
2. With the Office of Forage Crops, United States Department of Agriculture, (a) for the operation of the substation at Chillicothe, Hardeman County, and (b) for general forage crops investigations in the State of Texas.
3. With the Office of Cotton and Truck Disease and Sugar-Plant Investigations, United States Department of Agriculture, for general work with plant disease in Texas, and for the propagation and distribution of roaaceous fruits in the State.
4. With the School of Agriculture, this institution, wherein Station men give lectures to students, and teachers are allowed to do cooperative investigation work for the Station. Under the terms of this cooperation the swine feeding and breeding investigations of the Station are now being conducted.

Bulletins, reports, and circulars are issued by the Station as results obtained may justify. These publications may be had upon application to B. Youngblood, Director, College Station, Texas.

THE TEXAS ENGINEERING EXPERIMENT STATION.

D. W. SPENCE, DIRECTOR.

The Texas Engineering Experiment Station is composed of all the engineering departments of the College, and was organized for the purpose of affording a service to the industries of Texas similar to that afforded to the agricultural interests by the Agricultural Experiment Station; of assisting the urban population of the State in solving the technical problems of urban life; of investigating engineering and industrial problems of especial importance to Texas, and of disseminating information along these lines.

The Texas Engineering Experiment Station staff consists of the entire teaching force of the following departments of the College:

Architecture and Architectural Engineering.
Chemistry and Chemical Engineering.
Civil Engineering.
Economics.
Electrical Engineering.
Mechanical Engineering.
Physics.
Textile Engineering.

Bulletins have been issued as follows:

No. 1. Earth Roads.
No. 2. Relation and Value of Chemistry to Industry.
No. 3. The Comparative Value of Fuels.
No. 4. Highway Bridges and Culverts.
No. 5. Highway Engineering at the A. and M. College.
No. 6. Household Conveniences.
No. 7. Gravel Roads.
No. 8. Electricity in the Country Home.
No. 9. Cotton Classing and Marketing.
No. 10. Sewage Disposal for Country Homes.
No. 11. Purchasing by Specification.
No. 12. Demonstration Roads at the A. and M. College.
No. 13. The Financial Side of Road Improvement.
No. 14. Highway Engineering at the A. and M. College of Texas.
No. 15. The Organization of a State Highway Department for the State of Texas.
No. 16. Maintenance of Earth, Sand-Clay and Gravel Roads.

For copies of these bulletins and information regarding the work of the Texas Engineering Experiment Station, address D. W. Spence, Director, College Station, Texas.

EXTENSION SERVICE.

(Agricultural and Mechanical College of Texas and United States Department of Agriculture Cooperating).

CLARENCE OUSLEY, DIRECTOR.

Extension in agriculture and home economics is a work recently undertaken by the Agricultural and Mechanical College, under the joint direction of the College and the United States Department of Agriculture, and is sustained by appropriations from both the Federal and State governments under the Smith-Lever Act of Congress. The general purpose is to carry information from the College, the Experiment Stations, and other sources of information, research, and demonstration to persons who cannot attend the College. The service is supplemented by several cooperative projects of the United States Department of Agriculture which are maintained chiefly by the department. Under the cooperative agreement between the College and the department, practically all activities of the department in Texas are correlated with the service of the College. Besides the important undertaking of farm demonstration through county agents sustained jointly by the department, the College, and the community, the service includes information and demonstrations for the development of better farming and home keeping, and in a broad way for the promotion of rural welfare. For the fiscal year beginning July 1, 1917, funds will be available for establishing farm demonstration work and home demonstration work in fifteen or twenty counties in addition to those now enjoying this service. Applications for the work should be addressed to the Director of Extension. The specialists of the staff will respond to requests for special service in communities where there is no agent, and our bulletins and literature will be sent on application. The bulletins now available are as follows:

EXTENSION BULLETINS.

(For Free Distribution.)

B4. The Dairy Cow.
B5. Successful Marketing, East Texas Fruit and Truck Experience.
B8. Home-made Household Conveniences.
B9. Rations for Fattening Cattle for Market in Texas.
B10. Poultry in Texas.
B11. Land Bedding as a Method of Drainage.
B12. Boys' Agricultural Club Work.
B13. Suggestions for the Better Care of Texas Peach Orchards.
B14. Outlines of Extension Work in Agriculture and Home Economics in Texas.
B16. Boys' Agricultural Club Work (Corn Growing).
B17. Peanuts and Pigs.
B19. Turkey Raising in Texas.
B20. Extension Work in Home Economics for Rural Women.
B21. Top-working Pecan Trees.
B22. Harvesting and Packing Peaches.
B23. Terracing in Texas.
B25. How to Raise a Prize Winning Pig.
B26. Canning, Preserving and Pickling.
B27. Growing and Storing Sweet Potatoes.

CIRCULARS.

101. Winter Feeding of the Dairy Cow.
102. Home Canning of Meats.
103. How to Grow Sound Sweet Potatoes.
104. Red Springs Rural Credit Plan.
106. Feeding Brood Sow and Litter.

107. Spraying Apples and Pears.
108. Summer Spraying for Stone Fruits—Peaches and Plums.
109. Feeding and Care of Baby Beeves.
110. Cultivating the Bearing Orchard.
111. Cultivating the Young Orchard.
112. Why More Sheep Should be Raised on Texas Farms.
113. Why Texas Farmers Should Raise a Few Sheep.
114. Hints to the Beginner in Sheep Raising.
115. Hints for Sheep Shearing Time.
116. Plant Lice and Cabbage Bugs.
117. Treatment and Prevention of Common Diseases of Chickens.
118. Underground Silos.
119. Dried Green Corn.
120. Watermelon Diseases.
121. Thinning Fruit on Peach and Apple Trees.
122. Eradication of Johnson Grass.
123. Soybeans.
124. Selection of Sheep for Breeding Stock.
125. Cooperative Organization for Successful Sheep Production
126. Prevention and Treatment of White Diarrhea in Poultry.
127. Prevention and Treatment of Worms in Hogs.
128. Artificial Brooding of Baby Chicks.
129. How to Disinfect Premises Infected with Hog Cholera.
130. Killing and Picking Poultry.
131. Poultry Breeding Flock on the Farm.
132. Preparedness in Poultry-keeping.
133. How to Make Farm Butter.
134. Poultry Lice, Mites and Blue Bugs.
135. Summer Management of Poultry Flock.
136. Some Common Poultry Diseases.
137. Care of Growing Chicks.
138. Fitting Fowls for Show Room,
139. Cultivation of Sweet Potatoes.
140. Canning and Preserving Berries.
141. Internal Parasites of Chickens.
142. Canning, Preserving and Pickling Peaches.
143. Selecting Tomatoes for Seed.
144. Tomato Recipes.
145. Working Plans of Dry Mash Hopper.
146. Boll Weevil Precautions.
147. Some Suggestions of Flock Management.
148. Prevention of Poultry Diseases.
149. Killing Nut Grass or Coco.
150. How to Select Laying Hens.
151. Poultry Hints.
152. Ration for Chick Feeding.
153. Poultry Hints for Fall.
154. Fumigation for Weevils in Grain.

155. Freshening of Dairy Cows.
156. Rules for Testing Milk with Babcock Tester.
157. Planting and Transplanting Pecans.
158. Suggested Terms of a Hog Rental Contract.

In addition there is issued twice a month an Extension Service News Letter of seasonal advice, and numerous circulars from time to time covering both matters of general agricultural interest and matters of unexpected development. Besides the activities thus indicated, the Extension Service maintains the following undertakings:

LOCAL SHORT COURSES.

During the periods of comparative idleness on the farm, during the fall and winter, and especially during the period between the laying by and the gathering of crops, the College conducts short courses in agriculture and home economics. These courses continue for a period of three days in each place, and are conducted both by lecture and demonstration. Communities desiring short courses should apply well in advance of the time to the Director of Extension.

ORGANIZATION AND MARKETING.

An important agency in successful agriculture is organization for diversification and marketing. The College is prepared to assist groups of farmers in the formation of such associations for productive purposes for marketing and for credit. Information will be furnished on application concerning successful undertakings in cooperative effort.

HOME ECONOMICS.

In the view of the College and the Department of Agriculture, the farm home is an essential part of the farm establishment. It is more than a dwelling place, and the work of the housewife is a vital factor in the success of the farmer. Through the home demonstration work, through special efforts in dairying, gardening, orcharding, and poultry-keeping, and by means of the organization of rural women for the study of their household problems, the Extension Service undertakes the betterment of the rural home.

BOYS' AND GIRLS' CLUBS.

While rendering service to adult farmers, the College, true to the mission of an educational institution, looks to the rising generation as the greatest agency of rural welfare. Therefore, special efforts are made under trained leadership, by practical demonstration and by diligent instruction to give the boys and girls a proper understanding of agriculture and home economics, and to prepare them for successful and happy life in the country. The particular projects maintained are boys' agricultural club work, boys' live stock club work, girls' canning club work, and girls' poultry club work.

FERTILIZER CONTROL SERVICE.

G. S. FRAPS, STATE CHEMIST.

The chemist to the Texas Experiment Station is designated by law as State Chemist, and has charge of the enforcement of the fertilizer law. Under his direction fertilizers are inspected, sampled for analysis, the samples analyzed, and the results published as bulletins of the Experiment Station. It is also the duty of the State Chemist to investigate the composition, properties, and agricultural values of fertilizers, or fertilizer materials, and to conduct experiments relative to the value of fertilizers. Such investigations are being made, and the results published from time to time. The people of the State are furnished with information concerning fertilizers, by means of personal letters, bulletins, and otherwise. Cooperative fertilizer experiments are made with farmers, so that they can test the effects of various combinations of fertilizers on their own land.

Analyses are made of soils, irrigation and domestic waters, fertilizers, etc., when the analysis would be of public benefit along the lines of agricultural chemistry, and when the samples are taken in accordance with the requirements necessary to secure a suitable sample. Persons who desire to secure an analysis should request further information and instructions for sampling, as samples must be properly taken if the analysis is to have any value.

Analyses of feeding stuffs for the Feed Control Service, and chemical investigations of their composition and properties, are also made by the State Chemist.

OFFICE OF STATE ENTOMOLOGIST.

F. B. PADDOCK, STATE ENTOMOLOGIST.

By law the entomologist of the Texas Agricultural Experiment Station is ex-officio State Entomologist of Texas, and his headquarters are at College Station. The State Entomologist is charged with enforcing the laws of the State relative to diseases of honey bees and with furnishing citizens of the State information concerning injurious insects and their control.

OFFICE OF STATE FORESTER.

J. H. FOSTER, STATE FORESTER.

By act of the Thirty-fourth Legislature the office of State Forester was established, together with a department of forestry at the Agricultural and Mechanical College, and a division of forestry of the Agricultural Experiment Station with headquarters at College Station. In accordance with the law the State Forester has direction of all forest interests and all matters pertaining to forestry within the jurisdiction of the State. He is charged with the duty of enforcing all laws pertaining to the protection of forests and woodlands, preventing and extinguishing forest fires, collecting data relative to forest conditions, and cooperating with counties, towns, corporations and individuals in preparing plans for the protection, management and replacement of trees, wood lots and timber tracts. Under the forestry act the State is authorized to accept gifts of land to the State to be used so as to demonstrate the practical utility of timber culture, water conservation and as refuges for game. The board of drectors shall have the power to purchase lands in the name of the State, suitable chiefly for the protection of timber, as State forests, using for such purposes any special appropriations or any surplus money not otherwise appropriated which may be standing to the credit of the State forestry fund All moneys received from the sale of wood, timber, minerals, or other products from the State forests and penalties for trespassing thereon shall be paid into the State Treasury and shall constitute a State forestry fund.

GENERAL INFORMATION.

REPORTS.

Soon after the end of each term a report of the student's standing is mailed to his parent or guardian.

Reports are made in terms of letters, with the following meanings: 90 to 100, inclusive, A; 80 to 89, inclusive, B; 70 to 79, inclusive, C; 60 to 69, inclusive, D; below 60, E.

A preliminary report is sent out soon after December 1.

ABSENCES.

When a student is absent from recitation a considerable number of times, his absences are taken into account in making up his term grade, unless the work missed is satisfactorily made up before the time set for the examination.

ADVANCEMENT.

No student will be advanced from a lower to a higher class who has deficiencies in more than ten term-hours of work.

AMOUNT OF WORK—BACK WORK.

The amount of work to be taken by regular students is prescribed in the several curricula; irregular students must take such studies as may be prescribed in each case; they must in each term take all back work scheduled for the term; they are required to take at least 18 term-hours of work, and are not allowed to take more than 4 term-hours in excess of the amount required of the class to which they belong.

FEE FOR CHANGING COURSES OR TAKING UP NEW SUBJECTS.

For changing from one Course to another at any time after the beginning of the term there will be a fee of three dollars. For taking up a new subject later than two weeks after the beginning of a term there will be a fee of one dollar.

ELECTIVE STUDIES.

Elective studies are to be chosen by the student under the advice and direction of a member of the Faculty designated for the purpose, and subject to schedule. The choice of electives for any year must be made by April 15 of the preceding year. The right is reserved to withdraw any course not required for graduation, if it should be chosen by fewer than five students.

EXEMPTION FROM MILITARY DUTY.

Mature men who enter with advanced standing in a considerable number of subjects may, for reasons satisfactory to the Faculty, be excused from military duty. This privilege is intended to apply particularly to men who have had considerable experience in teaching or in other professional work.

GRADUATION.

A diploma of the College, with the degree corresponding to the course of study pursued, will be granted students who satisfactorily complete one of the regular courses.

No degree will be conferred without a residence of at least one year at the College. The diploma fee is $5.00.

HONORS.

At the end of each session students who have during the year received no term grade below B and have no deficiency in "Practice" are announced as "Distinguished."

EXPULSIONS.

At a joint session of the Board of Regents of the University of Texas and the Board of Directors of the Agricultural and Mechanical College, held at College Station, Texas, from June 30 to July 1, 1896, the following order was made:

> "It is ordered, that hereafter, when any student shall be dismissed or expelled from either of the branches of the University of Texas on account of any immoral or other conduct which shall render him an unfit character to be matriculated in any of such branches, it shall thereupon be the duty of the branch so expelling or dismissing such student to immediately notify the other branches of their action, whereupon such other branches shall refuse to receive such student for matriculation, or even for examination, should he apply therefor, until the branch which has so expelled or dismissed him has rescinded or reconsidered its former action, and recommended such student for admission into such other branch at which he may apply."

LIBRARY.

The Library contains something over 7500 volumes, exclusive of approximately 1500 bound public documents, and over 15,000 pamphlets.

It is chiefly a reference library, containing standard and technical works bearing particularly upon lines of study pursued in the College. The greatest care has been exercised in the selection of books in each line. With the exception of books of general referenc, current periodicals, and books temporarily reserved by certain departments for required reading, all books are loaned for home use for a period of two weeks with the privilege of renewal for the same length of time.

The Library subscribes to over 100 standard magazines, reviews, and technical journals, besides the leading newspapers of the State and some representative journals of the country. A large number of complimentary periodicals and exchanges, chiefly of a technical nature, are received.

The Library is a United States designated depository and receives copies of all Federal publications. A card index is maintained of all publications of the United States Department of Agriculture and of the various State Experiment Stations.

The Library is open from 8 a. m. to 5 p. m. and from 7:30 to 10 p. m. on week days and from 2 to 5 p. m. on Sundays.

RELIGIOUS AND MORAL CULTURE.

There is religious service in the chapel every Sunday for the corps of students and the residents of the campus. A Sunday school for Bible study, attendance at which is voluntary, affords additional help in the way of ethical training. Every effort is made through lecture and personal example to develop and protect good morals in the young men attending the institution.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Young Men's Christian Association occupies a handsome building, in which ample provision is made for the meetings of the Association, for Bible study, for social gatherings, for games. In the basement there is a well appointed swimming pool.

ATHLETICS.

The usual forms of athletic sports are permitted. The College is a member of the Texas Intercollegiate Athletic Association and of the Southwestern Intercollegiate Athletic Conference. The general rules of eligibility of both these organizations have been adopted by the Faculty. The Faculty Committee on Athletics is entrusted with the general oversight of athletics.

BAND.

An attractive feature is a regularly organized cadet band. Under the direction of a leader employed by the College, it furnishes music for occasions of social and military importance, gives open-air concerts in season, leads the regiment in marching to dinner, and plays at guard mounting and dress parade.

TRIPS OF INSPECTION.

At suitable times during the session trips of inspection, under the direction of some member of the teaching staff, are made to points of special interest. These trips have a high instructional value, and students of the upper classes are encouraged, though not required, to take them.

NON-RESIDENT LECTURERS.

At intervals throughout the session, men who have attained prominence in some branch of agriculture or engineering are invited to address the students with the view of enabling them to see more closely the relation between their college instruction and the work they will be called upon to do after they enter upon their professional careers.

AFFILIATED SCHOOLS.

Public schools of Texas rated as A1 by the State Department of Education are, without formality, considered as affiliated with the College.

Principals of private schools desiring affiliation with the College are invited to write to the Registrar for a form of affiliation.

Graduates of affiliated schools are admitted to the Freshman class at the beginning of the session without examination upon presentation of satisfactory certificates. The certificate must in each case show that the applicant has complied with the requirements as set forth under "Admission." The applicant will be credited with the number of entrance units to which his certificate shows him to be entitled.

THE MENORAH PRIZES.

The Menorah Societies in Texas offer annually two prizes, a first prize of fifty dollars, and a second price of twenty-five dollars, for the best essays on any subject dealing with the literature, the history or the achievements of the Jewish people. The competition is open to all students of this College and of certain other institutions in Texas in which there are Menorah Societies.

For full information, address Rabbi David Rosenbaum, Austin, Texas.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

Johnson, Albert Denarvous . . . . Mount Vernon.
B. S., A. and M. College of Texas, 1916.
Candidate for the Degree of Master of Science.

Mayo, Harry Mash, Jr . . . . Houston.
B. S., A. and M. College of Texas, 1915.
Candidate for the Degree of Master of Science.

Mogford, Joseph Sayers . . . . Erna.
B. S., A. and M. College of Texas, 1916.
Candidate for the Degree of Master of Science.

Potts, Arthur Tillman . . . . College Station.
B. S., A. and M. College of Texas, 1907.
Candidate for the Degree of Master of Science.

Reed, Edward Looman . . . . College Station.
B. A., Oklahoma Baptist College, 1912.
Candidate for the Degree of Master of Science.

UNDERGRADUATE STUDENTS.

Abbreviations.

Ag.—Agriculture.
Ar.—Architecture.
AE.—Architectural Engineering.
ChE.—Chemical Engineering.
CE.—Civil Engineering.
EE.—Electrical Engineering.
GE.—General Engineering.
ME.—Mechanical Engineering.
MilE.—Military Engineering.
Sci.—Science.
TE.—Textile Engineering.
VM.—Veterinary Medicine.
c.—Prescribed Two-Year Course in Agriculture.
d.—Elective Two-Year Course in Agriculture.
e.—Two-Year Course in Engineering.
f.—Two-Year Course for Electricians.
g.—Two-Year Course for Power Plant Operators.
h.—Two-Year Course in Textile Engineering.
m.—Two-Year Course in Agricultural Engineering.

'17—Senior.
'18—Junior.
'19—Sophomore.
'20—Freshman.
Sp.—Special Student.
1—First Year of the Two-Year Courses.
2—Second Year of the Two-Year Courses.

Abernathy, Fred Walter	'20 Ag	Fort Worth.
Abernathy, Overton	1 e	Paducah.
Abicht, Ralph Rupert	'19 Ag	Sherman.
Acheson, Alexander Mahon	Sp Ag	Trinity.
Adams, Clyde Akerly	'19 Ar	Oakland, Cal.
Adams, Lytal Mabry	'20 AE	Cleburne.
Adams, Wiley William	'20 Ag	Sonora.
Adkisson, Albert Wesley	'19 CE	Denton.
Ainsworth, Herman Miller	Sp Ag	Gonzales.
Akin, Earl T	'20 EE	Breckenridge.
Alderman, Ezra Fester	1 c	Cotulla.
Alderson, John Malcolm	2 d	Anson.
Alex, Alfred Herman	'18 Ag	Yorktown.
Alexander, Alvin Jay	'20 Ag	Gem.
Alexander, Irvin Jay	1 d	Cuero.
Alexander, Scott	'20 Ag	Gainesville.
Alexander, William Richmond, Jr	'18 Ag	Navasota.

Alford, Fred Fergus	1 e	Wills Point.
Allen, Edward Rudge	'17 Ag	Galveston.
Allen, Huron M	'20 EE	McGregor.
Allen, John Porter	1 m	Honey Grove.
Allen, John Spillman	'17 Ag	Palestine.
Allen, Raymond Burroughs	1 c	Hallettsville.
Allen, Richard Cortez	'20 Ag	El Campo.
Allert, Carlos Carter	'17 EE	Cuero.
Alsmeyer, Louis Henry	'20 Ag	Mission.
Amsler, Hervey Meyer	'18 TE	Hempstead.
Anderson, Albert Walter	'20 EE	Rio Hondo.
Anderson, Farris Shelton	'18 Ag	Mineral Wells.
Anderson, George Dunlap	'18 CE	Dallas.
Anderson, Howell Rufus	1 e	Haskell.
Anderson, Ivan Hood	2 c	Sutherland Springs.
Andrews, Dallas Robert	'17 Ag	Bryan.
Andrews, Earlie Clyde	2 c	Bryan.
Andrews, John Parke	Sp Ag	Haledon, N. J.
Appling, Grady Samuel	2 c	Louise.
Archer, Clarence Fulton	'20 Ag	Lyford.
Arledge, Henry Bond	2 c	Crockett.
Armstrong, Robert Volney	'20 Sci	Bryan.
Armstrong, Walter Hamilton	'19 CE	Paterson, N. J.
Arnold, Samuel Jones	'20 Ag	Waco.
Ashmore, John Barney	1 c	Rockwood.
Askew, John Milton	2 c	Baileyville.
Atchison, Henry Clay, Jr	'20 Ag	Hindes.
Atkins, Clifton Lee	'20 Ag	Llano.
Austin, James Lamar	Sp GE	Britton.
Avent, Benjamine Rhette	'17 CE	Lott.
Ayres, Louis Corpening	'19 Ag	Bowie.

Babcock, Charles Latham	'20 TE	Galveston.
Bailey, Buckner Arthur	1 c	Eldorado.
Bains, Whittaker Downman	'20 Ag	Brookshire.
Baker, Archie Crook	'20 Ar	Neame, La.
Baker, Dudley Evans	'18 CE	Crowley.
Baker, Otis Gordon	2 c	Edna.
Baker, William Westhoff	1 c	Edna.
Ballard, Andrew Leslie	'20 ChE	Bryan.
Barbee, Herman Adolphus	'20 ChE	Hico.
Barbee, William Terry	'17 Ag	Hico.
Barber, Ivan Wilmot	'20 MilE	Strawn.
Barfield, Clifton	1 e	Cheapside.
Barlow, Thomas Jefferson	'20 Ag	Eastland.
Barnes, James Renfro	'17 Ag	Chillicothe.
Barrett, Gus	1 c	Anson.
Barry, Pearce Kossuth	1 d	Walnut Springs.
Bartlett, Charles Henry	'20 MilE	Marlin.
Bartlett, George Clark	Sp Ag	Dallas.
Bartlett, Joseph Webster	'20 TE	Dallas.
Barton, John Alexander	'17 Ag	Port Lavaca.
Baskin, Benajah Jefferson	'20 Ag	Cameron.
Bassett, Sid Winston	1 c	Richmond.
Bates, Clyde Noble	'17 CE	El Campo.
Bates, John Lorenzo	'20 Ag	Beeville.
Bates, Warren Wilder	'18 ChE	Beeville.
Baucom, John William	'19 EE	Italy.
Baur, Louis William August	1 e	Moulton.
Beard, Octavius King	1 f	Edge.
Becker, Louis Charles	'19 Ag	Laredo.
Becker, Philip George	'18 Ag	Fort Worth.
Benavides, Lazaro Garza Ayala	1 c	San Antonio.
Benkendorfer, Fred George	1 c	West.
Benners, William Haywood	'20 Ag	Dallas.

Bennett, Adam Jackson	’17 EE	Nottawa.
Bennett, Joel Blackwell	’17 Ag	Hochheim.
Benson, Hardy Moulton	’18 Ag	Clarendon.
Bergman, Otto	1 e	Livingston.
Bernheim, Alphonse Gilbert	’20 EE	Galveston.
Berry, Jack	’17 Ag	Pearsall.
Berry, Newell Hall	’20 ME	Stamford.
Berry, William Bryan	’20 ME	Lufkin.
Bertschler, Frank Lee	’20 Ag	Bryan.
Bettis, Irvin Hunter	’20 ME	Beaumont.
Beverley, George Hendricks	’19 Ag	Dalhart.
Beverley, Henry Mason Randolph	1 d	Dalhart.
Beynon, Eugene Thomas	’20 EE	Corpus Christi.
Biggers, Clyde Eugene	’20 Ag	Lubbock.
Bigham, Eric Watt	’19 Ag	Rogers.
Bigham, Robert Andrew	’20 Ag	Killeen.
Birdsong, Ashton Henry	1 d	Fort Worth.
Birk, Charles Ernest	’20 Ag	Iowa Park.
Biskamp, Ernest Joseph	’20 CE	Laredo.
Bittle, Guy Manville	’18 Ag	Bryan.
Bivins, June	’17 Ag	Longview.
Black, Gene Allen	’20 EE	Temple.
Black, Robert Clyde	’17 CE	Skidmore.
Blackwell, David Allison	1 d	Mercedes.
Blair, William A	’19 Ag	Mesquite.
Blankfield, Meyer	’17 EE	Galveston.
Blanton, John Franklin	’17 EE	Hewitt.
Blocker, Richard Lane	2 d	San Antonio.
Bloodworth, John Edward	’19 Ag	Clarksville.
Bludworth, Port	Sp Ag	Flatonia.
Blumberg, Ralph Dietz	’20 AE	Seguin.
Blumenthal, Charles	1 d	Houston.
Bohn, Hermann Marwitz	’20 CE	Austin.
Bond, Otto Kurt	2 h	San Angelo.
Bone, Lewis Bernard	’18 CE	Dallas.
Booth, John Calvin	1 e	Chapel Hill.
Boothe, William Henry, Jr	Sp Ag	Gonzales.
Boren, Clyde Milton	Sp EE	Snyder.
Boriskie, Edward Henry	1 d	Bryan.
Born, Jacob	’18 Ar	Corpus Christi.
Bosque, Robert Edward	’17 Ag	Corsicana.
Boulden, Cecil Foard	’20 CE	Columbus.
Boyd, Charles Thomas	’18 Ag	Port Lavaca.
Boyd, Samuel Douglas	Sp Ag	Fannin.
Boyd, William Welder	’19 ME	Port Lavaca.
Braden, Clarence Camille	’18 CE	Jefferson.
Brady, Virgil Rue	’19 CE	Denton.
Brailsford, Thomas Reed	’17 Ag	Latexo.
Bramlette, Frederick Levenworth	’17 CE	Longview.
Brandt, Henry Christian	1 e	Wallis.
Brannen, Carl Andrew	1 d	Saron.
Bratton, Howard Basil	’20 Ag	Weatherford.
Braunig, Carl Francis	’17 Ag	Hallettsville.
Brecher, Edwin Robert	’17 Ag	San Antonio.
Breeden, Paul Fielding	1 d	Cuero.
Brewer, Roy Allan	’18 Ag	Cleburne.
Bridgwater, Malcolm Mcfarlan	’17 EE	Schulenburg.
Briggs, George Edward, Jr	1 e	Barstow.
Briggs, Robert Webb	’17 CE	New Orleans, La.
Brinkmann, Edgar	1 e	Comfort.
Briscoe, Andrew Clyde	1 c	Gaston.
Britton, John Woodson	2 h	Seymour.
Brooks, Edward Cottrell	’18 Ag	Bay City.
Brooks, Hugh	’17 Ag	Pasadena, Cal.
Brotherton, Robert Al	’18 Ag	Dallas.

Browder, Charles Marion	’17 CE	Groesbeck.
Brown, Edward Lee	’17 EE	Dallas.
Brown, George Washington	1 d	Anderson.
Brown, Joe Carraway	’20 Ag	Waco.
Brown, Joseph Turner	1 e	Gainesville.
Brown, Rodgers Porter	’17 ME	Dallas.
Brown, Robert Wilbur, Jr	1 c	San Angelo.
Browne, James Duke	’18 CE	Luling.
Browne, John Merriwether	1 d	Karnes City.
Bruner, Robert Allen	1 c	Huntsville.
Brunnemann, Frank Cadwell	’18 Ag	Flatonia.
Bryan, Lester Leon	’17 CE	Glen Rose.
Bryant, Columbus Binkley	1 d	Whitewright.
Bryson, Edward Earle	1 e	Mansfield.
Buchanan, Durant Samuel	’17 Ag	Bryan.
Buescher, LeRoy August	1 e	Moulton.
Bull, Richard Platt	’19 Ag	Austin.
Buller, Fred Williams	1 c	Brookshire.
Bullitt, George Willcock	1 m	Huntington.
Burkes, William Marion	’20 Ag	Reagan.
Burkett, Harry J	’17 Ag	Galveston.
Burkett, James Marion	’17 Ar	Graham.
Burks, John Jefferson	1 c	Midland.
Burleson, Rufus C	’20 CE	Waco.
Burnett, Howell Aubrey	’20 EE	Laredo.
Burnett, William Autrey	’20 Ag	Anson.
Burns, Darnce Bernard	’19 CE	Bowie.
Burns, Leslie Lewis	1 d	Yoakum.
Burns, Waller Thomas	1 d	Houston.
Burton, Edgar Kimberlin	’20 Ar	Clarendon.
Bussell, Ralph Wayman	’20 ME	Palacios.
Butchee, Cecil Lyles	’20 CE	Cameron.
Butler, John Bryant	’20 EE	Somerville.
Byars, Russell Henry	1 d	Houston.
Byrd, Frank Caldwell	’20 ME	San Marcos.
Byrom, William Kinyan	1 e	Whitney.

Cade, Albert Whitney	’19 CE	Chandler.
Cadenhead, John I	1 f	De Berry.
Calloway, Lorenzo D	’20 Ag	Mineola.
Camp, Robert Shaw	’18 Ag	Navasota.
Campbell, Burgess	’19 ME	Holliday.
Campbell, John Wesley	1 c	Cuero.
Cariker, Albert Hugh	1 f	Cushing.
Carlisle, William Glen	’20 Ag	Plano.
Carmichael, George, Jr	Sp Ag	Hillsboro.
Carmichael, Ray	Sp ChE	Saint Jo.
Carnahan, Lester Holman	’18 Ag	Pine Bluff, Ark.
Carpenter, Oscar Lee	2 d	Corsicana.
Carper, Marion Edmund	2 c	Rio Vista.
Carr, Vallie Calhoun	’20 EE	Stockdale.
Carroll, Joe E., Jr	’20 Ag	Beaumont.
Carson, Alfred Doughton	’17 Ag	Bryan.
Carson, Delbert Clarence	1 d	Cheapside.
Carson, Robert Lee	’20 ChE	Bryan.
Carter, Charles Edward	’20 Ag	Mexia.
Cartwright, Emmit Bea	’17 Ag	Sherman.
Cassity, Jack Holland	’19 Sci	San Antonio.
Casstevens, Graham Leroy	’19 Ag	Alvarado.
Castillo, Cesar Augustin	’20 Ag	Mexico City, Mexico.
Castleton, Thomas Austin	’20 CE	Bay City.
Cather, Harold Malcolm	’17 EE	Waco.
Cavender, Carl C	’20 MilE	Riverside.
Cawyer, John Roy	1 c	Mercury.
Champion, Drue Andrue	2 c	Ennis.

Chandler, Addison Alexander	'20 Ag	Allen.
Chappelle, Hugh Lyman	'19 Sci	College Station.
Chappelle, Ray L	'17 Ag	College Station.
Cheeves, Thomas A., Jr	'20 Ag	Marlin.
Chemerow, Harry	1 c	Drogitchin, Russia.
Childers, Reddin Raymond	1 d	Jasper.
Chilton, Louis Warren	'20 Sci	Goliad.
Claiborne, Sidney	1 f	Coleman.
Clark, Charles Harrison	'19 Ag	Hico.
Clark, Winston Blanton	'20 MilE	Waco.
Clayton, Henry Malone	'19 EE	Waco.
Cleere, George Lee, Jr	'20 Ag	Russellville, Ala.
Clegg, Giles Connell	1 d	San Angelo.
Cochran, John Irion	'20 CE	Pearsall.
Cochran, Thomas Beauford	'17 Ag	Austin.
Cockerell, Robert Seth	'20 CE	Seymour.
Cockrell, James Bass	'17 Ag	Terrell.
Cocreham, Guy Combs	'19 CE	Luling.
Coffee, William Cleaveland	'20 EE	Miami.
Coffin, Paul Caswell	'20 ChE	Blum.
Coffin, Sylvester Frigell	2 d	Mathis.
Cole, James Graydon	1 e	Killeen.
Coleman, Howard	'20 Ag	Corpus Christi.
Coleman, Mike A	1 e	Cameron.
Coleman, Wiley Lee	'18 ME	Fort Worth.
Colville, Myron Henry	1 d	Seguin.
Colvin, Cicero Houston	'19 Sci	Duffau.
Connell, Robert Elias	1 d	Atkins, La.
Conover, Mack Dewey	2 e	Moore.
Conway, Myron Joseph	'17 Ag	Mission.
Cook, Arthur Lee	1 f	Eddy.
Cook, Lee Edwin	'20 EE	Jasper.
Cooksey, James Benajah	1 e	Corsicana.
Cooper, F. A	'18 EE	Jefferson.
Cooper, Joe Floyd	2 f	Britton.
Copeland, Clinton Marion	'18 EE	Graham.
Corry, Hal Francis	'17 EE	Rockwall.
Cortez, Hernan	Sp Ag	Piura, Peru, S. A.
Courtney, Seigel Langston	1 d	Pettus.
Cowart, Ernest L	'20 Ag	San Antonio.
Cox, Carl Clarence	'17 EE	Mt. Vernon.
Cox, Wallace Hughey	'20 EE	Haskell.
Craig, Samuel Reid	'17 CE	El Campo.
Crandall, Wilbert Marion	'20 Ag	Sherman.
Crawford, Charles William	'19 ME	Bryan.
Crawford, James Maurice	'20 EE	Devine.
Crawford, Robert Daniel	'18 Ag	Grand Prairie.
Criley, George Gordon	1 e	Galveston.
Crocker, Norman G	'18 Ag	Center.
Cronk, Frank Lewis	'19 ME	Waxahachie.
Crook, George Morgan	'20 Sci	Paris.
Crow, Floyd Arnold	'17 Ag	Waco.
Crumrine, Clarence Eugene	Sp Ag	Grand Ridge, Ill.
Crunk, Koehring Addison	1 c	Martindale.
Crutchfield, Graham Peterson	'20 EE	Navasota.
Culp, Robert	1 d	Coleman.
Culver, Albert Lee	Sp Sci	Lampasas.
Curtis, Wyman Broun	'17 Ag	Lake Village, Ark.

Dannenbaum, Joseph Bowman	1 d	Houston.
Darby, James Andrew	'17 EE	San Antonio.
Davern, James Irion	'20 Ar	Navasota.
Davidson, Caven Johnston	1 f	Moore.
Davidson, George Alexander	'20 EE	Bryan.
Davidson, Green Adkins	'19 TE	Caldwell.

Davis, Everett Hunter	1 c	Cisco.
Davis, Gordon Bryan	1 m	Houston.
Davis, Gus Haynie	1 d	Sonora.
Davis, George Marion	'19 Ag	Milford.
Davis, John William, Jr	2 c	Mesquite.
Davis, Thomas Jefferson	'18 Ag	Leonard.
Dawson, Nicholas Amos, Jr	1 d	Waco.
Day, Junius Eugene	1 m	Rotan.
Deam, Andrew Taylor	Sp Ag	Lancaster.
Deaton, Guy Henry	1 e	Bryan.
Delaney, Willia Edmund	1 c	Goliad.
Denison, Jim Swayne	'19 CE	Temple.
Denning, Charles Oscar	'17 ME	Mexia.
Denny, William Murdock	'20 EE	Crockett.
Deputy, Ona Delos	'17 Ag	Dallas.
Derrick, William Wesley	'19 Ag	Thorp Spring.
DeRussy, Charles Nolte	'20 EE	Belle Alliance, La.
Dick, Walter Gresham	Sp Ag	Columbus.
Dickens, Samuel, Jr	Sp ME	Lampasas.
Dickie, George Dewey	'20 Ag	Woodson.
Dietert, William Edward	'19 Ag	Kerrville.
Dinan, Leonard Fredrick	'20 Ag	Silsbee.
Dittmar, Elmer Albert	'20 Ag	San Antonio.
Doak, Clifton C	'19 Ag	Snyder.
Dodd, Grover Cleveland	'17 Ag	Rosalie.
Dodd, Harold Thomas	2 c	Langtry.
Dodge, Dempsey Kemp	'19 Ag	Houston.
Dodson, Quaite	Sp Sci	Hubbard.
Dollens, Edward Williams	1 c	Willis.
Dollins, Dudley Alexander	'20 EE	Waco.
Doney, Louden Charles, Jr	'18 Ag	Corpus Christi.
Doney, Walter Ferguson	1 d	Corpus Christi.
Douglas, Warren Hamilton	Sp Ag	Bellevue.
Douthit, Leland Emory	2 g	Dallas.
Dowling, Willard Isaac	1 d	Bryan.
Dragoo, Allen Crawford	1 c	Whiteland.
Drake, Clarence Ray	1 e	Maypearl.
Draper, John B	1 e	Haskell.
Dreyfuss, Arthur	'20 CE	San Antonio.
DuBard, Willie Freddie	1 e	Houston.
Dudley, Edison Becton	'18 Ag	Plano.
Duke, John William	'18 ME	Pearsall.
Dunkle, Paul Burtch	'17 Ag	Lelia Lake.
Dunkle, Ralph Owen	2 c	Lelia Lake.
Dupuy, William Hamlett	1 c	Tennessee Colony.
Dyer, Scott Bruce	'17 EE	Tulia.
Dykes, Jefferson Chenowth	'20 Sci	Dallas.

Earnest, Lawrence Howell	'17 CE	Laredo.
Eckhardt, Clarence Kent	2 c	Webster.
Eddleman, Herschel Glen	'19 Ag	Graham.
Edgar, Henry Benbow	'20 Ag	Cuero.
Edwards, Albert B., Jr	1 c	Henrietta.
Edwards, Arthur Irwin	'20 Ag	Millican.
Edwards, Kenneth Johnson	'20 Ag	Gainesville.
Egger, Harmon Wilson	'19 ME	Terrell.
Elam, William Nile	'17 Ag	Ohio.
Eldridge, Herbert	'17 CE	Pineland.
Elliott, Arnett	1 e	Corsicana.
Elliott, Robert Drane	'17 EE	Corsicana.
Ellis, Joe F	Sp Sci	Lockhart.
Eppright, Edward Everett	1 c	Manor.
Ervin, John Guy	'18 Ag	Green Valley, Va.
Erwin, Newell Chandler	1 f	Charlotte.
Eschenburg, Herbert Walter	'20 ME	Floresville.

Eubank, Bransford	'20 Ag	Byrds.
Evans, Addison Lee	1 f	Brownwood.
Evans, Coxey	'18 CE	Crowley.
Everett, Claude Hill	1 e	Taylor.
Everett, Richard Hobson	1 c	Santa Anna.
Ewers, James Franklin	'20 Sci	San Juan.

Fabian, Carl Mann	'19 ChE	Dallas.
Fahey, Martin Joseph	'18 Ag	Navasota.
Faires, Lee Killough	2 c	Flatonia.
Fancher, Rollie	'20 Ag	Seymour.
Farrell, Ed Sam	Sp Sci	Monticello, Ark.
Farrell, James Leonard	1 e	Humble.
Farthing, Welbourne Owen	'17 Ag	Valley View.
Fenner, William Bell	2 c	Cordele.
Fenske, Hermann Walter	2 d	New Braunfels.
Ferrero, Martin P	1 c	San Antonio.
Figari, Charles	Sp Ag	Lima, Peru, S. A.
Figari, Ernesto	Sp Ag	Lima, Peru, S. A.
Figari, George	Sp Ag	Lima, Peru, S. A.
Findlater, John Corscaden	'17 EE	San Angelo.
Fisher, Sterling Tom	1 c	Utopia.
Fitzwilliam, Edwin Dennis	Sp Ag	Bastrop.
Flach, Ernest Kapp	'17 Ag	Comfort.
Fleming, Charles Herman	'17 Ag	Merit.
Flewellen, Eugene Thweatt	'20 EE	Longview.
Foley, Dennis	'20 CE	Galveston.
Foley, Roland	'19 CE	Denison.
Ford, Marvin Harrison	'18 Ag	Navasota.
Forrest, Thomas Carr	Sp Ag	Waxahachie.
Forster, Fritz Hermann Gustav, Jr	1 c	Rosenberg.
Forsyth, Burnett Gordon	'20 ME	McKinney.
Forsyth, George Alexander	'17 ME	McKinney.
Fosselman, Clyde Shelton	'20 EE	Navasota.
Foster, Aubrey Kenneth	1 d	Greenville.
Foster, Wilbur Carradine	'17 Ag	Opelousas, La.
Foster, William Rush	1 c	Riesel.
Fowler, William Henry	'20 Ar	Oakhurst.
Frame, William De Vere	'20 EE	Denison.
Francis, David Spence	'19 CE	Marble Falls.
Francis, James Wallace, Jr	'19 Ag	Calvert.
Francks, Church Barry	'18 Ag	Marlin.
Franklin, Clarence Boone	'20 VM	Benchley.
Franklin, Isaac Newton	'19 Ag	Beeville.
Frazer, Albert Conroe	'20 ME	Conroe.
Frazier, Brice Harold	'20 Ag	San Benito.
Frazier, Harris Lamar	'20 EE	Tyler.
Freeman, Clifford	'18 Ag	Medina.
Friend, William Heartsill	'20 Ag	Marshall.
Frnka, Bruno	2 g	New Ulm.
Fry, Homer Lee	Sp Ag	Denton.
Fry, William Francis Ballard	1 h	Shiner.
Fuchs, Arthur	1 c	Paige.
Fuchs, John William	'17 EE	Round Rock.
Furman, Richard	1 e	Corpus Christi.

Gaedcke, Gilbert Dueh	'19 CE	Houston.
Gainer, Charles S	Sp Ag	Bryan.
Galewsky, Lawrence David	1 c	Hempstead.
Galliford, Walter Thomas	'17 ME	Galveston.
Gardner, Hunter Everette	'20 EE	Fort Worth.
Gardner, James Eldridge	'19 CE	Comanche.
Gardner, Neil Ethridge	'17 Ar	Comanche.
Garison, Fabian D	1 c	Medina.
Garitty, Benjamin Joseph	'20 EE	Corsicana.

Garner, Charles William	1 f	Dickinson.
Gay, Homer Lee	1 c	De Kalb.
Gibbens, Joseph David	2 c	Center Point.
Gibbs, John Lawson	'17 ME	Burnet.
Gibson, Manly Broadus	'17 Ag	Aberdeen, Wash.
Giesecke, Arthur	'20 Sci	Ballinger.
Giesecke, John Oscar	'20 ChE	Brenham.
Gilbert, George Wren	2 f	Corsicana.
Gilfillan, Max Dole	'17 Ag	St. Johnsbury, Vt.
Gilliam, Ashbel Cook	1 d	Hondo.
Gilliam, Thomas James	2 d	Hondo.
Gilmer, Oscar Erwin	1 e	Honey Grove.
Gilmore, Leon McKain	1 e	Wills Point.
Givens, Ben Mathew	'19 Ag	Dallas.
Glenn, Vernon Bryan	'19 Ag	Lufkin.
Glezen, Hugh Norman	'20 CE	Gladewater.
Glimp, Wilton Horace	1 d	Burnet.
Goeth, Wolfgang August	1 c	Marble Falls.
Goodman, Robert Blair	2 d	Corsicana.
Goree, Langston James, Jr	'20 Ag	Navasota.
Gorman, Edwin Mobley	'20 VM	Oakwood.
Gouger, Bryan Gratz	'20 EE	San Antonio.
Gough, Roy Hampton	'20 Ag	Hereford.
Grace, Joe William	'18 CE	Spur.
Graham, Mack Charles	Sp Ag	McGregor.
Graham, Richard Carroll	'20 Ag	Floresville.
Granau, Edgar Lucian	'20 ME	Bellville.
Grangeiro, Christopher	Sp Ag	Pernambuco, Brazil.
Graves, Marshall Pulliam	2 d	Melissa.
Gray, Archer Duncan	1 h	Baileyville.
Gray, Oscar Somers	'17 Ag	Terrell.
Greathouse, Thaddeus Allen	'18 Ag	Austin.
Green, Frank Lester	'19 CE	Bowie.
Griesenbeck, Carlos Philip Timothy	'18 Ag	San Antonio.
Grimsley, Felix Alva	'20 Ag	Fayette, Ala.
Grissom, Roland Lionel	'17 EE	Houston.
Groesbeeck, Frank Johnston	1 d	San Antonio.
Grogan, George Byrne	1 c	Byers.
Groginski, Julius Woolf	'20 ME	Bryan.
Grothaus, Fredrick Edward	'20 MilE	Victoria.
Gustafson, Carl Reuben	1 f	Round Rock.

Haardt, Theodore Henry	1 d	Galveston.
Haas, Julius Karl	'18 Ag	Brighton.
Haden, Julian Frank	'17 Ar	Timpson.
Hafner, Vernon Etter	'17 Ag	Greenville.
Hagan, Thomas Edison	'18 Ag	Troup.
Hagen, Julius Allen	'19 TE	Yoakum.
Haines, Paul Graves	'17 Ag	Gatesville.
Halbedl, Clifton Charles	'17 Ag	San Antonio.
Haley, Thomas Franklin	1 e	Irving.
Hall, Francis Malcolm	1 d	Bryan.
Hall, Jack Ben	'20 Ag	Greenville.
Hall, Larkin Lee	1 m	Bangs.
Hall, Travis	1 d	Hightower.
Hall, Walter Henry	'19 ME	Wichita Falls.
Hallmark, William Pascal	'20 EE	Dublin.
Halsey, Frank Wilbur	'17 Ag	East Hampton, N. Y.
Hamby, Curtis	1 e	Dike.
Hamer, Robert Coit	2 d	Roff, Okla.
Hames, Quincy Lelon	Sp Ag	Crosbyton.
Hamilton, Mark Armstrong	'18 ChE	Tyler.
Hamilton, Walter Fenton	'20 ME	Denton.
Hamner, Edward Joseph, Jr	'17 Ag	Sweetwater.
Hampton, Manton Milton	1 c	Waxahachie.

Hancock, Carl Elmo	'19 ME	Cooledge.
Hancock, Percy	'19 EE	Dallas.
Hanson, Gordon Bell	'17 EE	Tyler.
Hanson, William Floore	'20 Ar	Tyler.
Hanway, John Thomas, Jr	'17 TE	Bryan.
Hardwicke, John Benjamin	'19 Ag	Corpus Christi.
Harkrider, William Bean	'20 EE	Fort Worth.
Harman, Gabriel Conger	'20 Ar	Waco.
Harpole, Bruce	'20 Ag	Lindale.
Harrell, George Hezekiah	Sp Ag	Lexington.
Harrell, George Overton	'20 Ag	Anson.
Harrell, William Marion Yater	'19 EE	Grandview.
Harris, Eugene Elliott	'20 AE	Nevada.
Harris, Oscar Graham	'20 Ag	Waxahachie.
Harris, Robert Alexander	'20 ME	Bryan.
Harris, Stephen Walter	2 c	Timpson.
Harris, William Diggs	1 e	Angleton.
Harris, Wirt L	'20 Sci	Mineral Wells.
Harrison, Barnabas	1 e	Paris.
Harrison, Carl Price	1 e	Pecan Gap.
Harrison, Eugene Lynch	1 e	San Augustine.
Harrison, Richard Henry	'20 VM	Bryan.
Harvin, Charles Miller	'18 Ag	Sutherland Springs.
Hasie, Coleman L	'19 CE	Dallas.
Hatley, Joseph Deutz	'20 EE	Galveston.
Hatley, Walter George	'19 ME	Galveston.
Hays, Aubrey Guerney Victor	1 c	Francitas.
Head, Earl Churchel	2 d	Oakhurst.
Heard, Cecil Emory	'19 Ag	Stoneham.
Heard, Harrell J	1 c	Goliad.
Heep, Boone Hillsman	Sp Ag	Buda.
Heep, Herman	'20 Ag	Buda.
Heisig, Hathorne Fergus	'20 Ag	Beaumont.
Heisig, Paul Albert, Jr	'20 Ag	Beaumont.
Helm, Jack	'20 Ag	Clifton.
Henderson, Arno Augustus	'20 Ag	Centerville.
Henderson, Clyde Douglass	'20 Ag	Sulphur Springs.
Henderson, John Wells, Jr	1 d	Victoria.
Hensarling, Abram	'18 Ag	Wellborn.
Hensarling, Claudie Ray	1 e	Wellborn.
Henslee, Samuel Gilbert	'20 Ag	Rosebud.
Hensley, James Aubrey	1 e	Anderson.
Herndon, Robert Velvin	1 c	Lewisville, Ark.
Hervey, Stewart Darden	'17 Ag	Galveston.
Heye, Willie John	'20 ChE	Hallettsville.
Hickerson, Robert Clarence	'19 CE	Crawford.
Hicks, Clinton Ellis	'19 EE	Bellevue.
Hicks, Jesse William	'17 Ag	Canyon.
Hicks, Peter Franklin	1 m	Canyon.
Hiett, Roger Williams	'20 Ag	Arlington.
Higdon, Roy	1 d	Quinlan.
Hill, Henry	1 c	Wills Point.
Hill, James Aquilla	1 c	Corpus Christi.
Hill, James Daniel	1 e	Eldorado.
Hill, Ralph Edwin	'17 EE	El Campo.
Hilton, Neal Hamilton	1 e	Alta Loma.
Hines, Fred Austin	Sp Ag	Coleman.
Hintner, Joseph Daniel	'20 Ag	Talpa.
Hintz, Richard Wilhelm	'19 Ag	Sealy.
Hockaday, Frederick James	'18 Ag	Madill, Okla.
Hodges, Albert	1 h	Matador.
Holden, Harral	'20 Ag	Rotan.
Holik, William Veazey	'20 EE	Chriesman.
Holmes, Neill Shaw	'17 Ag	Fayetteville, N. C.
Holt, Alfred William	1 e	Galveston.

Holt, Dewey James	1 c	Wheeler.
Hook, Donnie Leon	'17 CE	Denison.
Hooks, Joseph Key	'20 Ag	Colorado.
Hooks, Richard Oscar	'20 Ag	Pennington.
Hooper, Dwight Winship	'18 CE	Marble Falls.
Hopkins, Edward Desmond	'19 CE	San Marcos.
Hopkins, John Philip	2 f	San Antonio.
Hoppe, Roland Charles	'18 ME	Cypress Mills.
Horger, James Caughey	'20 EE	Hondo.
Horn, Jeffie Neal	'17 Ag	Athens.
Horner, Jesse Leon	1 e	Tyler.
Howell, Douglas Wister	'19 Sci	Bryan.
Hubbard, Edmund Paul	'17 EE	Lampasas.
Hudgins, John LaFayette	'18 Ag	Houston.
Hudnall, Roland Monroe	'20 Ag	Dallas.
Hudson, Horace Seymour	'20 Sci	Pearsall.
Huebner, Louis Henry Alfred	'17 Ar	Shiner.
Huff, William Wayne	Sp Ar	Corsicana.
Hughes, Edward Thurston	'20 CE	Uvalde.
Hughes, John Dimmitt	Sp Ag	Georgetown.
Hughs, Thomas Bluford	1 f	Shiner.
Hull, Joseph Henry	'20 VM	Carthage.
Hull, Kirby Smith, Jr	Sp Ag	Temple.
Hume, William Joseph	'20 CE	Houston.
Humphreville, George Dewey	'19 ME	Houston.
Hunsucker, John Leslie	'20 Ag	Beaumont.
Hunt, Walter Harold	2 d	Bowie.
Hunter, Archie D	'20 EE	Santa Anna.
Hunter, Orvis Doyle	1 f	McCaulley.
Hurt, Sam Fuqua	'18 Ag	Austin.
Hutchings, Sealy, Jr	1 e	Galveston.
Hyland, John Charles, Jr	Sp Sci	College Station.

Irby, Benjamin Earle	'17 Ar	Beaumont.
Irby, Richard Edward	'20 Sci	Beaumont.

Jack, Alfred Houston	1 c	Ben Franklin.
Jackson, Henry	1 c	Cooledge.
Jackson, William Leonard	2 f	Iolanthe.
Jacobson, Hilmar Herman	'19 TE	New Braunfels.
Jahn, Erich Julius	2 c	San Antonio.
James, Spencer Thompson	'20 Ag	Sterling City.
Jameson, Jackson Hart	'18 Ag	Kosse.
Jamison, Orland Lee	Sp Ag	Knox City.
Japhet, Curtis Bismark	1 g	Houston.
Japhet, Doris Jackson	1 h	Houston.
Jarrell, Jack Marlin	2 c	Belton.
Jenkins, Joe Alpheus	'17 Ag	Caldwell.
Jenkins, Thomas George	'20 VM	Bryan.
Jennings, Edgar Petty	'17 Ag	Martindale.
Jennings, Robert Quincy	'17 Ag	Martindale.
Jennison, Henry Walter	'20 EE	Pearsall.
Jobson, Charlie Culberson	'18 Ag	Mesquite.
Johnson, Alma Clark	1 c	Plainview.
Johnson, Aubrey Lee	'20 Ag	Hubbard.
Johnson, Clarence	1 c	Hubbard.
Johnson, Howard Hall	1 f	Cookville.
Johnson, Olaf Konstantine	'17 Ar	Waco.
Johnson, Tull	Sp Ag	McGregor.
Johnson, Thomas Elmer	Sp Ag	Floresville.
Johnson, Walter Theodore	'20 VM	Galveston.
Jonas, Henry Fulton	'19 CE	Houston.
Jones, Carl E	1 e	Quinlan.
Jones, Donnis Ludwell	1 c	Moscow.
Jones, Gainer Brown	'20 CE	Bryan.

Jones, Herbert Henry	'20 CE	Dallas.
Jones, Samuel Upton	1 c	Utopia.
Jones, Wilbourne Ocil	'19 MilE	Fort Worth.
Jopling, Homer Augustus	'17 Ar	Wharton.
Jordan, Pete, Jr	1 c	Mason.
Joyce, John Berry	'17 EE	Brady.
Judd, Frank Wallace	'18 Ag	Fort Worth.
Jungman, Arthur Henry	'20 MilE	Hondo.
Junkin, Eben Dixon	'19 Ar	Brownwood.
Kaden, Carl	'20 Ag	Gainesville.
Kan, Frank Funn	Sp Ag	Canton, China.
B. S., Oregon Agricultural College, 1916.		
Kean, Frank Daniel	1 e	Abilene.
Keasler, Morris Lelan	'19 Ag	Hughes Springs.
Keefer, Elbert Owen	'20 EE	North Zulch.
Keel, Ernest Lee	1 h	Gainesville.
Keeling, Walter Sherman	1 e	Dallas.
Kelley, Clyde Wands	1 c	Wheeler.
Kelly, Charles Frederick	1 f	League City.
Kelly, Thomas James	'18 CE	Beaumont.
Kelso, Thomas Baylor	1 f	Fort Worth.
Kenan, Wilder	'18 CE	Seymour.
Kendrick, James Marcellus	'18 Ag	Waco.
Kendrick, Lilbern Aston	'20 Ag	Plano.
Kennard, Hartwell Jones	'18 Ag	Gonzales.
Kent, Richard Augustus	Sp CE	Waco.
Kerbow, Herbert Ralph	'17 Ar	Clarendon.
Kiber, Daniel Henry	'17 Ag	Corsicana.
Kimbell, Agee	'18 TE	Ennis.
Kimbrough, William Paul	2 c	Bells.
King, Arthur Lee	'20 EE	Denison.
Kingswell, John William	'18 Ag	Angleton.
Kirkland, Kenneth Lester	'19 Ag	Cleburne.
Klock, Neil Haven	'19 Ag	Cheneyville, La.
Knickerbocker, Arthur Balfour	'20 CE	Austin.
Knickerbocker, Harry Clayton	'18 CE	Austin.
Knight, Kara Festus	'20 CE	Tahoka.
Knolle, Byron Frank	'19 EE	Ellinger.
Koen, John Hardy	'20 CE	Pittsburg.
Koerth, Charles John	'17 Ag	Brady.
Kokernot, Robert Lusk	Sp Ag	Gonzales.
Kolar, Louis Leo	2 c	Flatonia.
Kotzebue, Leon Lightner	'17 Ag	Flatonia.
Krueger, Roland Eugene	1 c	Twin Sisters.
Kubena, Jerome John	'20 ME	Fayetteville.
Kuhne, Cecil Crawford	'19 ChE	Runge.
Kunz, August George	2 g	Cameron.
Kurtz, Lawrence Archite	'17 EE	Seadrift.
Kuykendall, William Schuyler	1 d	Royse City.
Kvinta, John Frank	'20 ChE	Hallettsville.
Lackey, Talmage Patrick	'20 EE	Floresville.
Lambert, Harland Frank	'20 EE	Hereford.
Landa, Maynard Ivan	'19 EE	Eagle Lake.
Landers, John Davison	2 c	Cleburne.
Landon, Rowley McKaine	'20 ChE	Kaufman.
Landrum, Joseph H	'19 MilE	Hereford.
Langford, Ivan	'17 EE	Georgetown.
Lanier, Guy Vernon	2 c	Marquez.
Larey, Vilos Lang	1 g	San Angelo.
LaRue, Powers Larkin	'20 MilE	Athens.
Lasseter, William Ernest	'20 Ag	Henderson.
Lattimore, Robert Baker	'20 Ag	Fort Worth.
Laughlin, Raul Allen	'20 EE	Waco.

Lawler, Eugene S	Sp Sci	Bryan.
Lawrence, John Michael, Jr	'19 Ag	Bryan.
Lawrence, Walter Hayden	'18 Ag	Cameron.
Leary, John Benjamin Rex	'18 Ag	San Antonio.
LeBaron, Carlos William	'20 Ag	Sherman.
Lebo, Miles Bishoff	'20 Ag	Waynesville, Pa.
Lee, Robert Stein	'20 Sci	Cisco.
Leffel, Robert Carr	'18 Ag	San Angelo.
Leidolf, Emil J	2 e	Weimar.
Leinveber, Adolph	Sp TE	Wiesbaden, Germany.
Leon, Manuel	Sp CE	Mexico City, D. F.
Leverett, Frank Marshall	'20 CE	Kilgore.
Levington, David	Sp CE	San Antonio.
Lewis, Cleon Summers	1 d	Forney.
Lewis, John B	1 f	Stanton.
Lewis, Thomas Barrett	1 h	Valley Mills.
Lienhard, Albert Cyrus	'20 Ag	Cuero.
Lillard, Lee Anderson	1 c	Seguin.
Lindemann, Le Roy	'20 Sci	Bartlett.
Lindsey, Roy Henry	Sp Ag	Houston.
Lipscomb, Clarence Max	1 c	Luling.
Lipscomb, Thomas Garland	'18 EE	Saron.
Litterst, Frank Carl	Sp TE	Houston.
Little, Pendry Evans	1 c	Big Spring.
Livingston, Elmo Clarence	'19 ChE	Coleman.
Livingston, George Dahmer	'20 Ag	Marshall.
Livingston, William Edwin	'19 Ag	Fort Worth.
Lockett, William Cureton	'17 EE	Cleburne.
Loftus, Luke Witt	'17 CE	Dolores.
Logan, William Oma	2 d	Winnsboro.
Lohoefener, Alvin Henry	2 f	Burkburnett.
Long, George Alvin	'17 Ag	Greenville.
Long, Louis Frank	'20 ME	Galveston.
Long, Robert Newton	2 d	Pearsall.
Longcope, Edmund McLeod	'20 Ag	Houston.
Looney, Benjamin Franklin	'18 Ag	Austin.
Loughmiller, George Jefferson	'20 ChE	Roxton.
Lovelady, Howard Dolihite	1 c	Rockwood.
Lowe, Harold Mathis	'17 ME	Oakes, N. D.
Lowrey, Pierce Long	'20 ChE	Hillsboro.
Lowrey, Wiley Hope	1 e	Weimar.
Lowry, Richard Cohron	'17 EE	San Antonio.
Lowther, Horace Cecyle	1 e	Anderson.
Luker, Cyril	1 d	Proctor.
Luker, John William	2 c	Proctor.
Luther, James	'20 EE	Port Lavaca.
Lyle, Francis Marion	'17 Ag	Quinlan.
Lyne, Eugene Scott	'17 ME	Houston.

McAngus, William Andrew	'20 Ar	El Roy.
McBride, Bedford Brown	1 c	Goldthwaite.
McCaleb, Van Dyne	1 e	Galveston.
McClintock, Jack Risher	'20 EE	Waco.
McClure, Clarence Samuel	'20 EE	Dallas.
McCrummen, Frazier	'20 Ag	Lubbock.
McDaniel, George Edward, Jr	'17 CE	Mertens.
McDonough, James Moore	'19 ME	Galveston.
McDonough, John Patrick	1 e	Galveston.
McDuffie, Roy Oglethorpe	'20 ChE	Longview.
McFarland, Hugh	'17 Ag	Brownwood.
McFarlin, John Watson	1 f	Pecan Gap.
McGuffey, Paul	1 d	Hubbard.
McHenry, Albert Connell	'20 Ag	Mission.
McKay, Malcolm Dale	1 e	Big Spring.
McKean, Elmo Byron	1 m	Prairie Lea.
McKimmey, John Clyde	'18 Ag	Gustine.

McKnight, John Banning	'18 Ag	Carlsbad.
McLamore, Roy Travis	'19 Ag	Garrison.
McLean, Archie Reynolds	'17 EE	Orange.
McManus, David Stone	'20 EE	Thomaston.
McMillin, Murray Woodford	1 f	Denison.
McMonagle, James Connell	1 c	Atascosa.
McMurrey, John Dunlap	1 d	Cuero.
McNaughton, Alexander Hamilton	'20 ChE	Palestine.
McNew, John Thomas Lamar	'18 CE	Mineral Wells.
McOsker, William Paul	'19 ChE	Amarillo.
McQuillen, Everett Eugene	'20 Ag	Cleburne.
MacFadden, Willford	'19 Ag	San Antonio.
Mahan, Jack Francis	'20 Ag	Gainesville.
Major, D. Don	1 c	Chickasha, Okla.
Major, Howard Hugh	Sp Ag	Chickasha, Okla.
Mangold, Charles Adam, Jr	1 c	Dallas.
Mann, George Cullee	'19 Ag	Laredo.
Mann, John Adam	Sp Ag	Dallas.
Manning, Llewellyn Rigsby	'18 TE	Calvert.
Manning, Ray	'20 Ag	Leonard.
Marmion, Wilbert Henry	'20 EE	Beaumont.
Marshall, Melvin Irvin	'20 Ag	Brady.
Martin, Brassel	1 c	Smiley.
Martin, Daugherty Exline	'17 CE	Waxahachie.
Martin, Everett Clifton	'18 Ag	Bryan.
Martin, Jay Wilfred	'19 Ag	San Antonio.
Martin, Randolph Magruder	'20 CE	San Antonio.
Martin, Sam Winford	'17 Ag	Morgan.
Martinson, Charles Gilbert *B. S. University of Kansas, 1912.*	Sp ME	Wichita Kan.
Masters, Horace Grover	2 d	Celeste.
Mathews, Samuel Lodge	1 d	Coleman.
Matthes, Louis Herbert	'20 EE	Abilene.
Matthews, Harvie Rogers	1 e	Chapel Hill.
Mattox, Jesse Kuykendall	'17 EE	Greenville.
Mauldin, Edward	'17 EE	Lancaster.
Maxwell, Ernest Raymond	1 d	Wayland.
Maxwell, William Wortham	'18 Ag	Austin.
Mayer, Vernon Robards	'20 Ag	Shreveport, La.
Melton, Ira	1 c	Sulphur Springs.
Melton, Joseph Henderson	'18 Ag	Leonard.
Menn, Hubert Leopoldt	'17 Ag	Yorktown.
Merrell, Robert Erroll	'19 Ar	Keller.
Messenger, Frank	Sp Ag	Paterson, N. J.
Metcalfe, Samuel Little	'17 Ag	Pearsall.
Metcalfe, Thomas Moody	1 c	San Antonio.
Miley, Sidney Hill	'19 Ag	Bastrop.
Millender, Lawrence Quinlan	1 d	Houston.
Miller, Clarence	1 c	Beeville.
Miller, Garland Burleigh, Jr	'20 EE	Bastrop.
Miller, Jennings Bryan	'18 EE	Ladonia.
Miller, James Shaeffer	'20 MilE	San Antonio.
Miller, Looe	'20 Ag	Rotan.
Mills, William Neely	'20 Ag	Comanche.
Milner, Drinkard Blacknall	'17 Ar	Henderson.
Milner, Robert Teague, Jr	'18 Ag	Henderson.
Mitchell, Henry Arthur	'20 Ag	San Antonio.
Mitchell, Merlin	'17 Ag	Gainesville.
Mitchell, Sidney Foster	2 d	Houston.
Mogford, Fritz William	'18 Ag	London.
Moloy, Robert Gerald	1 e	Corsicana.
de Montel, Elbert Alexander	Sp GE	Hondo.
de Montel, Emmett Joseph	'19 EE	Hondo.
Montfort, Peter Thorp	'20 Ag	Roane.

Montgomery, Roark	'17 Ag	Corsicana.
Moore, Burke A	Sp ME	Lewisville, Ark.
Moore, Dudley Spencer	'18 Ag	Lampasas.
Moore, Isaac George	'17 TE	Hubbard.
Moore, Joseph Grady	'20 Ag	Bagwell.
Moore, Lewis Blaffer	'19 CE	Balboa Heights, Panama.
Moore, Louis Bettis	'20 ME	Beaumont.
Moore, Leonard Willis	2 c	Fort Worth.
Moore, Thomas Jefferson	1 d	San Saba.
Moore, William Morton	'20 Ag	San Saba.
Moore, William Reither	1 h	Houston.
Moreland, Banks George	'17 ChE	Fort Worth.
Moreland, Robert Lee	'20 EE	Galveston.
Morgan, George Bason	'17 CE	Greenville.
Morgan, Robert Blane	Sp Ag	Colorado.
Morris, Carl McDonald	Sp Ag	Buckholts.
Morris, Carl Oran	1 d	Sulphur Springs.
Morris, George Cooper	'17 EE	Dallas.
Morrison, Max Moses	'20 Ag	Vilna, Russia.
Moseley, Ewing S	Sp GE	Dallas.
Moseley, Robert Patillo	'20 Ag	Quanah.
Moses, Dayton, Jr	'20 Sci	Burnet.
Moses, Harry Bowman	'18 ChE	Burnet.
Moses, Robert Lewis	'18 Ag	Rogers.
Mozisek, Johnnie Rudolph	1 f	Weimar.
Mugg, John Dunklin	'20 Ag	Fort Worth.
Mullaly, Edward Alexander	'20 Ag	Laredo.
Muller, Albert Furney	Sp Sci	Laredo.
Munsch, Cornelius Aloysius	2 c	Rosebud.
Murph, Clyde Louis	'20 GE	Wichita Falls.
Murphree, David Douglas	1 e	Thomaston.
Murphrey, Clarence Jennings	2 c	Seagoville.
Murphy, John Bartlett	Sp GE	Amarillo.
Murrah, Frank Volney	'19 EE	Plano.
Murray, Fredrik Alexander	'20 VM	Amsterdam, Holland.
Myers, Harry S	'18 Ag	Jolly.
Myrick, Russell, Jr	Sp Ag	Lubbock.
Nagle, Edgar Thomas	'18 Ag	Manor.
Nail, Benjamin Miles	'17 Ag	Crawford.
Nash, Elmer C	'18 Ag	Cheneyville, La.
Neal, Paul LaRue	'19 EE	DeLeon.
Nelson, Gilbert Earl	1 e	Waco.
Neuhaus, Edward Theodore	1 e	Hallettsville.
Newton, Charles Calvin	Sp Ag	Gainesville.
Neyland, Orlando Lawrence	'18 Ag	Brady.
Neynaber, Clarence	1 c	Galveston.
Nichols, Clay	'20 MilE	Luling
Norment, Jack Moncure	'18 Ag	Bastrop.
North, Calvin	1 f	San Antonio.
North, John Edward	1 d	Yoakum.
Norwood, Clifford Bryan	'20 ChE	Honey Grove.
Nussbaum, Claude Albert	'18 Ag	Mexia.

Oates, Orville Henslee	2 d	Waco.
O'Conor, Robert	'17 Ag	Laredo.
Ogden, Oral Cyrus	'20 Sci	Sonora.
Oliver, Amory	'18 EE	Lampasas.
Oliver, Hollis	'20 Ag	Lampasas.
Otto, John August	'17 Ag	Ottine.
Owen, Hoy	'20 CE	Athens.
Owen, Jack	'20 Ag	Athens.
Ownby, Clifford William	2 d	Merit.

Pagan-Ortiz, Rafael	1 c	Ponce, Porto Rico.

Pagel, Frank August	1 e	Shiner.
Palmer, Sims Allen	'20 Ag	Dunn.
Papacek, August Joseph	1 e	Moulton.
Parke, Morton Leon	2 e	Dickinson.
Parker, Charles Burney	1 c	Brenham.
Parmley, Jess C	'19 Ag	Nacogdoches.
Parr, Adolphus D	1 d	Waelder.
Pate, James Elmer	'20 Ag	Bryan.
Patterson, Terrill Edward	1 e	Wichita Falls.
Patillo, Robert E. Lee	'20 Ag	Greenville.
Peace, Hugh	'20 ME	Batesville.
Peacock, Leonard Eshar	'20 EE	Runge.
Pereira, Clodoaldo Guedes	'18 ME	Parahyba, Brazil.
Pereira, Djalma Guedes	1 c	Parahyba, Brazil.
Pereira, Walfredo Guedes	'20 Ag	Parahyba, Brazil.
Perkins, James Monroe	'20 Ag	Palestine.
Perkins, Leon Blair	1 e	Durant, Okla.
Perrin, Arthur Charles	'17 ME	Boerne.
Perrin, Stanley Ezra	'17 Ag	Boerne.
Persohn, John William	1 e	Keller.
Persons, Robert Hodge	'20 Ag	Hico.
Peteet, George Walton	'19 Sci	College Station.
Peters, Noah Linton	'17 Ar	Hondo.
Peterson, Hal	Sp Ag	Kerrville.
Petty, Frank Albert	'20 EE	Mansfield, La.
Peutet, Jean Paul	'17 Ag	Paris, France.
Phillips, Jackson Marion	'18 Ag	Lima.
Phipps, Marion Singer	'20 CE	Marlin.
Pittman, Eugene	1 e	Fort Worth.
Pondrom, Sam Eagon	1 d	Houston.
Porter, Bishop Garvin	2 d	Tenaha.
Porter, James	'19 EE	Graham.
Porter, John Crumbaugh	'19 CE	Terrell.
Potter, Mark Milton	'19 MilE	Galveston.
Potthast, Eugene B	'20 ME	Weimar.
Potts, Thomas Paine	1 d	Valley Mills.
Powell, Roger Q. Mills	'20 Ag	Austin.
Powell, Stona Newland	'19 CE	Bangs.
Powers, Garland Arch	'17 Ag	Lockhart.
Powers, Thomas Searcy	'20 Ag	Bryan.
Prestridge, Kenneth Kade	'17 CE	Alvarado.
Price, Alexander Johnson	'19 EE	Galveston.
Price, Pinckney Bryan	'19 CE	Honey Grove.
Prideaux, George Dewey	'20 Ag	Farmer
Priester, Lewis Arnold	'17 EE	Richmond.
Priester, Leslie Emil	'18 EE	Richmond.
Prime, Wendell Francis	'18 Ar	Houston.
Pustejovsky, Vladik Jerry	1 e	Moulton.
Pyeatt, Finis Ewing	'20 ME	Silverton.

Rabb, Fay William	1 d	Lone Oak.
Rae, Charles Spurgeon	1 c	Talpa.
Rainey, David Erasmus	1 d	Paris.
Rambie, Guy Strickland	1 e	Bandera.
Ramsey, Robert Howard	1 e	Goliad.
Rasberry, Ernest H	'20 Ag	Chickasha, Okla.
Rasbury, Edgar Leonidus	Sp Ag	Ballinger.
Rasmussen, Abbey Andrew	'19 ME	Port O'Connor.
Rau, Walter Samuel	1 f	San Angelo.
*Ray, Charles Newton	'20 CE	Belton.
Ray, William Jewell	'18 Ag	Jewett.
Rayor, Bernard Leon	'19 EE	Durango, Colorado.
Read, John Pampell	'20 ChE	Silsbee.

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*Died March 7, 1917.

Reed, Lee Rotan	1 d	Sterling City.
Reed, William Davis	'20 EE	Holland.
Rees, Alvin Roy	'19 Ag	Center Point.
Regenbrecht, Edward Michael	'18 Ag	Sealy.
Regenbrecht, Ferdinand	'18 ME	Sealy.
Reid, Joseph Jenkinson	'20 VM	Bryan.
Reily, Jacob Merlin	Sp Ag	D'Hanis.
Reily, Paul Patrick	'17 Ag	D'Hanis.
Reisman, Arthur Max	'18 EE	Llano.
Remington, Willie Edward	1 f	Caddo.
Reynolds, Ewell Ellison	'20 Ag	Mt. Calm.
Rhemann, George Alexander	1 c	Brookshire.
Richardson, Bryan Eugene	1 e	Jourdanton.
Richardson, Joseph Chambers	1 e	Liberty.
Riddlesperger, William McKinley	1 d	Malakoff.
Rigney, Emory Elmo	'18 Ag	Leonard.
Risinger, Lloyd Voss	1 g	Purmela.
Ritch, Ola Cooke	1 d	Yazoo City, Miss.
Ritchey, Richard Claud	1 m	Breckenridge.
Roberts, M. Jones	'20 ME	Whitewright.
Robertson, Albert Louis	'19 Ag	Gainesville.
Robertson, Allen West	Sp Ag	Gonzales.
Robertson, Forrest DeWalt	1 d	Joshua.
Robinson, Levi C	'19 Ag	San Benito.
Roe, Peter Henry	'17 EE	San Antonio.
Roensch, Joseph Dewey	1 e	Smithville.
Rogers, Joseph Carroll	'18 ME	Hondo.
Rogers, Madison Odis	1 d	Lytle.
Rogers, Ray J	'20 ME	Buda.
Rollins, Jesse Thomas	'20 Ag	China.
Rollins, John Wesley	'17 Ag	China.
Romberg, Louis D	'19 ME	Holland.
Rose, Martin Arden	'18 ME	Schulenburg.
Rose, Robert Hudson	'20 Sci	Gainesville.
von Rosenburg, Hilton Otto	1 d	Hallettsville.
von Rosenburg, William Edward	'18 Ag	Hallettsville.
Ross, Barnett	2 c	Del Valle.
Ross, Henry	'20 Ag	Del Valle.
Ross, Marcus Joel	1 c	Willis.
Rothe, Hans Hugo	'17 Ag	Hondo.
Rountree, John Blackwell	'17 Ag	Rockdale.
Rowell, Thomas Darrel	Sp Sci	Jefferson.
Royder, Douglas Edell	Sp Ag	Wellborn.
Royder, Douglas Roland	2 c	Wellborn.
Royder, Jeff Pettus, Jr	2 d	Wellborn.
Ruckman, John Dickson	2 d	Karnes City.
Rueter, William H	2 c	Waco.
Russell, James Bradford	'19 CE	Bonham.
Russell, John William, Jr	1 d	Bonham.
Russell, Ross Roberts	1 c	McGregor.
Russell, Ralph Woodruff	1 f	San Antonio.
Russell, William Ross	1 c	Lubbock.
Rust, Francis Henessy	1 e	Galveston.
Ryall, Zacheus Wheeler	'20 Ag	Jasper.
Sada, Fernando G	1 d	Monterey, Mexico.
Safford, Henry Melsom	1 c	Waring.
Salazar, Carlos	1 c	Mexico City, Mexico.
Sandel, John Mickle	1 e	Shiro.
Sanders, Andrew Newell	'18 TE	Lavernia.
Sapper, Ferdinand Eugene	1 e	Galveston.
*Saunders, Charlie Walter	1 e	Smithville.
Saunders, Roy Francis	'18 Ag	Blanco.

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*Died October 21, 1916.

Savage, Marshall Edward	'18 CE	Florence.
Scaff, George Newton	1 d	Clarksville.
Schaefer, Henry Joseph	'20 GE	Schulenburg.
Schaer, Robert	'19 ChE	Chapel Hill.
Scherer, Victor	'19 Ag	Weatherford.
Schiller, Ivan	'18 Ag	Sealy.
Schmidt, Archibald Gottfried	'17 ME	Eagle Pass.
Scott, Thomas R	'19 EE	Houston.
Scott, Walter Winfield	1 c	Austin.
Scrimgeour, William Boyer	'18 EE	Galveston.
Scudder, Joseph Luke	'20 Ag	Waco.
Scudder, Thomas Enoch	'19 Ag	Waco.
Seale, Frank B	1 d	Benchley.
Seale, Murray Edgar	1 f	Jasper.
Seargeant, Albert James	'18 CE	Brackettville.
Seele, Hermann Hugo	'17 EE	New Braunfels.
Self, George D	1 m	Crowell.
Settegast, Marion Edward	'18 Ag	Houston.
Sexauer, William Gottlieb	'18 EE	San Antonio.
Seyle, Samuel Roscoe	1 e	Palatke, Florida.
Seymour, Samuel K	'18 Ag	Columbus.
Shaffer, Lawrence Edward	1 m	McGregor.
Shamblin, Allan Jackson	'19 CE	Houston.
Shankle, George Clifford	'20 EE	Alvord.
Sharp, William Joseph	'20 EE	San Antonio.
Shaw, Jessie Vernil	'19 ME	Rogers.
Shelton, Edward Calhoun	1 c	Waco.
Shelton, Frederick Brown	'20 Ag	Tyler.
Shelton, Jack	'17 Ag	Brownwood.
Shelton, John Elbert, Jr	1 e	Austin.
Sherrill, William C	2 c	San Marcos.
Shiner, Vernon Jack	'18 Ag	San Antonio.
Shofner, William Elton	'20 CE	Killeen.
Shults, Charles Othello	1 d	Llano.
Shurley, Merton Gibbons	'20 Ag	Sonora.
Sibley, Whit Cavett	1 c	Belcher, La.
Simmonds, George LeClere	1 c	Cleburne.
Simpson, William Elmo	'20 ME	Llano.
Sims, Archie Preble	1 e	Lufkin.
Sims, Carl Francis	1 e	Killeen.
Singletary, Charles Arthur	'20 Ag	Atlanta.
Singleton, David Alexander, Jr	'20 Me	Lufkin.
Skeeler, Frank Joseph *B. S., A. and M. College of Texas, 1910.*	Sp Ag	Orange.
Skramstad, Selmer Harris	'19 EE	Clifton.
Slagle, Robert Lester	'18 EE	Troup.
Slaughter, J. W., Jr	Sp Ag	Dallas.
Slay, John Richardson	'19 Ag	Frost.
Slemmons, Jesse	'18 TE	Lone Oak.
Smith, Alfred Bramlett	'20 Ag	Rotan.
Smith, Albert Clarence	'20 EE	Bryan.
Smith, Arthur Lee	'18 Ag	Blanco.
Smith, Brandon Lillie	1 d	Stockdale.
Smith, Donald Lester	'19 Ag	Sulphur Springs.
Smith, Embre Warren	1 c	Austin.
Smith, Glen Buck	'20 ME	Fort Worth.
Smith, Michael Gibson	Sp GE	San Augustine.
Smith, Philip Basil	'17 Ag	San Augustine.
Smith, Robert Bronson	1 c	Crockett.
Sneed, P. L., Jr	'18 Ag	Montgomery.
Snow, Oron Lynn	'18 CE	Bangs.
SoRelle, Irving Frederick	'20 Ag	Clarendon.
Sorensen, Anton Marinus	1 d	Holland.
Sparks, Thomas Eugene	'20 EE	Seguin.
Sparks, William McCann	1 h	Houston.

Spencer, Donald Allison	Sp Ag	Crosbyton.
Spencer, Oliver Forbes	'17 Ag	Crosbyton.
Sprague, Carl Tyler	'19 Ag	Bremond.
Squyres, Clarence Wils	'20 EE	Breckenridge.
Stacey, John Hammond	'19 MilE	Dallas.
Staerker, Otto	'18 CE	Cuero.
Stallings, Archie	'20 VM	Bryan.
Stanford, Frank Leslie	1 c	Lyford.
Stanley, Henry Thomas	'20 MilE	Weatherford.
Starcke, Gilbert Hugo	'20 Ag	Seguin.
Stark, James Albert	1 d	Sealy.
Starnes, Jesse Lee	'18 Ag	San Antonio.
Stearnes, Roy Earl	'18 Ag	Waco.
Stedman, Edward Dunn, Jr	'20 Ag	Beaumont.
Steed, John Louis	'20 EE	Winnsboro.
Steinfeldt, Robert Henry Carl	'19 CE	San Antonio.
Stephenson, Joseph John	1 f	Pecan Gap.
Stevens, David Lee	'19 Ag	Mexia.
Stevenson, Donald Alfred	'18 Ag	Galveston.
Stewart, John Sylvester	'19 Ag	Houston.
Stewart, Ross	Sp GE	Houston.
Stieber, Benjamin Franklin	1 c	Rocksprings.
Stiles, Marvin	2 c	Ohio.
Stockton, Haywood Paul, Jr	'17 CE	Louise.
Stockton, Thomas Powell	1 c	Kenedy.
Stockwell, William Palmer	'20 Ag	Alvin.
Stoffers, Christian Crawford	Sp Ag	Graham.
Stolz, Clinton R	1 d	La Grange.
Stone, Richard Bowles	'20 Ag	Waco.
Stovall, John Thomas	1 d	Hubbard.
Strange, Charles Hawkins	1 f	Bruceville.
Stricklen, Carl Cester	1 d	Juno.
Stricklen, Elza Angus	1d	Juno.
Stringer, Burton Roe	'20 Ag	Midland.
Stringer, Pleasant Preston	'20 EE	Cleburne.
Stroman, Govan Napoleon	'17 Ag	Uvalde.
Stuart, Clyde	1 e	Bedias.
Studer, John Franklin	'20 Ag	Canadian.
Sullivan, William Jennings Bryan	1 e	Fort Worth.
Sumner, Lawrence Earl	'19 Ag	Blanket.
Swickheimer, Lee	1 d	Goliad.
Swink, Wilmer Turner	'17 Ag	Dawson.

Tabor, Charles Hillsman	1 c	Bryan.
Tabor, John Franklin	2 f	Oakhurst.
Taliaferro, Champ Lee, Jr	'18 TE	Henderson.
Tanner, Paul Franklin	'20 EE	Fort Worth.
Tarkington, Shelby Grant	'18 Ag	Yoakum.
Taylor, Bill Northcutt	'19 CE	Longview.
Taylor, Clarence Eugene	1 d	Eagle Pass.
Taylor, Clifford J	'20 Ag	Cumby.
Taylor, Edmund	'20 ChE	Waco.
Taylor, Robert Wesley	'20 Ag	San Angelo.
Taylor, Samuel Harmon	'20 Sci	Goliad.
Temple, Theodore Watkins	'18 CE	Weatherford.
Thaxton, William Mogford	'19 Ag	Mason.
Thomas, Allan	2 d	Farwell.
Thomas, Charles Leonard	'17 Ag	Marfa.
Thomas, Douglas Vass	1 d	Texico, N. M.
Thomas, Edwin Wayne	'17 Ag	Marfa.
Thomas, William George	'19 CE	Rogers.
Thompson, Aubrey Lee	1 m	Troy.
Thompson, Cecil	'20 CE	Bartlett.
Thompson, Charlie Jenkins	'20 Ag	Byrds.
Thompson, Charles Marshall	'20 Ag	Devine.

Thornhill, Van de J	'20 TE	Navasota.
Thornton, Penn Bedell	2 d	Houston.
Thornton, Thomas Leonard	'20 Ag	Emhouse.
Thrasher, Robert Edward	1 g	Austin.
Thrasher, William Broadway	'20 ME	Austin.
Tighe, Louis Thomas	'18 EE	Sour Lake.
Titus, Elton Wright	1 c	Sulphur Springs.
Todd, Charles Carroll	'20 CE	San Antonio.
Tomlinson, Gaither Roger	'19 Ag	Denton.
Tooley, Roy Powell	'19 ME	Weatherford.
Torrence, Richard Herley	1 c	Waco.
Torrents, Carl Miguel	'19 Ag	College Station.
Trickey, Charlie Thomas	'17 CE	Sanger.
Trotti, William L	'20 EE	Jasper.
Tuerpe, Elmer Christopher	'19 Ag	Benton.
Tullos, Sylvester Carlton	1 d	Grand Prairie.
Tullos, William Richmond	1 d	Grand Prairie.
Tumlinson, Otto Gurvas	'18 Ag	Verdi.
Turnbough, William Madison	1 c	Quanah.
Turner, George O	Sp Ag	Livingston.
Tyler, William Stanton	'20 Ag	Wolfe City.

Uhr, Irwin Adolph	'17 EE	San Antonio.

Van Court, Clifford Golten	'20 Ag	San Angelo.
Vanderburg, J. Ercell	'20 ChE	Silsbee.
Van Hook, Raymond	1 f	Corsicana.
Vaughn, George Albert	2 e	Tulia.
Velvin, James Carrol	1 e	Lewisville, Ark.
Vogelsong, Merlin Arthur	'20 CE	Bay City.
Voss, Roy Wesley	'20 ME	Miles.

Wadley, Burr Plevin	'17 Ag	Ferris.
Waerndorfer, Charles Richard	1 d	Vienna, Austria.
Wagner, Thomas Martin, Jr	'20 CE	Marshall.
Walker, Albert Alvia	'17 CE	Rockwall.
Walker, Alfred Jackson	1 c	San Saba.
Walker, James Knox	'17 CE	Azle.
Walker, John Thaddeus	'17 CE	Azle.
Walker, Littleton Samuel	Sp Ag	Waldrip.
Walker, Thomas Daniel	Sp Ag	Crawford.
Wallace, Brink Walter	1 c	Bryan.
Wallace, Karl Edward	'20 ME	Santa Anna.
Waples, Samuel Hewes	1 e	Houston.
Ward, Medley Franklin	1 c	Olivia.
Warden, Crawford Coleman Bryan	1 d	Roxton.
Warfield, Hunter Rarey	Sp Ag	Crockett.
Waring, R. Percy M	2 c	Waring.
Warren, George Russell	'18 Ag	Yantis.
Warren, Willie Floyd	2 c	Lavernia.
Waterhouse, Walter Howard	'17 Ag	St. Louis, Mo.
Watkins, Charles Evan	'20 CE	Bay City.
Watkins, William Howard	'18 AE	San Antonio.
Watson, Edward Italy	'19 CE	Galveston.
Watson, John Albert	1 c	Osceola.
Watson, Robert Lee	Sp GE	Navasota.
Weaver, Alfred Bradley	'17 EE	Rule.
Weaver, Marcus Athos	1 c	Chickasha, Okla.
Webb, Fred Fletcher	1 d	Lucas, La.
Webb, John Creighton	'20 Ag	Lucas, La.
Webb, John Edgeworth	'18 Ag	Bryan.
Webb, Kenneth Malcolm	1 m	Waco.
Weilenman, Alfred Morris	1 f	Newcastle.
Weir, Henry Bradley	'19 Ag	Galveston.
Weldon, Carl Meyer	1 e	Ladonia.
Wellons, John Wesley	Sp Ar	Corsicana.

Wendler, Eugene	Sp GE	Boerne.
Wenmohs, Victor Dewey	1 d	Cypress Mills.
Werner, Alvin Albert	1 d	Houston.
Wessels, Elton Gerhard	1 h	La Grange.
West, Oliver De Valquit	1 d	Talpa.
Westerhoff, Adolph Gustav	1 e	Moulton.
Westerhoff, Frederick William	’18 Ag	Moulton.
Weyland, Alvin Harold	’19 EE	Taft.
White, Charles Cecyl	’20 EE	Carrizo Springs.
White, Roger Perry	’20 ME	Bartlett.
White, Robert W.	1 d	Brady.
Whitely, Felix Elbert	’18 ME	Alpine.
Whittemore, James A.	1 e	Annona.
Whitton, Edward Oran	1 d	Timpson.
Whitton, Robert Benjamin	’17 Ag	Timpson.
Wiedenfeld, Benno Louis	2 f	Comfort.
Wiesen, Thomas Ferdinand	’19 Ag	Fort Worth.
Wilhite, Ray Maynard	’18 ME	Lometa.
Wilkerson, Muldrow Perry	Sp Ag	Navasota.
Willcox, Jack Edgar	Sp Ag	Big Spring.
Willett, Noyes Waters	’20 Ag	Thurber.
Williams, James Stanley	’20 EE	Bishop.
Williams, James Wishart	’18 CE	Hamilton.
Williams, Stump Marvin	’17 Ag	Corsicana.
Williamson, Alma Boston	’19 Ag	Alief.
Williamson, Charles Donovan	’20 Ag	Fort Worth.
Williamson, John Albert	’19 AE	San Antonio.
Willman, Philip Earnest	’20 Ar	Greenville.
Wills, James Valliant	’19 CE	Bruceville.
Wilson, Benjamin Lewis	Sp EE	Bryan.
Wilson, Charlie Haynes	1 e	Snyder.
Wilson, Edwin Butler	1 c	Bellville.
Wilson, Eugene Stanley	’19 ChE	Denton.
Wilson, Frank William	’17 Ag	Port Lavaca.
Wilson, Homer Travis	1 e	Hereford.
Wilson, Joseph Clay	’18 Ag	Normangee.
Wilson, John Erwin	’20 AE	McKinney.
Wilson, John T., Jr.	’20 Ag	San Antonio.
Wilson, James Vernon	’19 Ag	Florence.
Wilson, Rowland Wood	1 c	Yancey.
Winn, William Valentine	1 e	Granger.
Winters, Emmette Shelton	1 c	Dublin.
Wipprecht, Carl	’18 Ag	Bryan.
Wipprecht, Read	’17 Ag	Bryan.
Wise, Paul Eaton	’20 ChE	Houston.
Wiseman, Walter Herron	2 h	Lavernia.
Withers, William Paschal	’20 Ag	Bryan.
Witmer, Brewer Ferree	’20 EE	Mercedes.
Witmer, Hugh Hardin	1 c	Clarksville.
Wittman, Frank Philip	’19 Ag	Bryan.
Wolston, Clinton Sawyer	1 e	Galveston.
Wood, Albin Francis	Sp Ag	Richland Springs.
Wood, Benjamin Dial	1 d	Sulphur Springs.
Wood, Casper Alfred *M. S., A. and M. College of Texas, 1915.*	Sp Ag	College Station.
Wood, William Maxwell	’17 Ag	Hubbard.
Woods, Roy William	1 e	Houston.
Woodson, James Monroe	Sp Ag	Temple.
Woody, George Abraham	’17 ME	Tilden.
Woolverton, Arthur Hobart	’20 CE	Wills Point.
Word, Wallace Alexander	’20 CE	Kyle.
Wormser, Marcus Royle	’19 Ag	Laredo.
Wotipka, Walter Martin	Sp Ag	Flatonia.
Wray, George Hamilton, Jr.	’20 EE	Dublin.
Wright, John Lloyd	’20 Ag	Whitewright.

Wright, William Ace	1 g	Leming.
Wynn, Charles Clinton	Sp Ag	Bryan.
Yarbrough, Harris Eugene	'20 ChE	Kaufman.
Yarbrough, Julian	1 c	Durant, Okla.
Yeary, John Woodruff	1 d	Karnes City.
Yeates, Clarence Carpenter	'17 EE	Katy.
Young, James McDonald	'18 Ag	Hallettsville.
Young, John Madison	'20 Ag	Rotan.
Zedler, Otto Frederick Christian	'17 EE	Ottine.
Zegarra, Enrique Coronel, Jr	'20 Ag	Lima, Peru, S. A.

SUMMER SESSION, 1916.

Ainsworth, S. M	Cotton Classing	Gonzales.
Anthony, T. C	Cotton Classing	Konawa, Okla.
Avent, B. R	College	Lott.
Baggett, J. C	Cotton Classing	Teague.
Barnett, E	Cotton Classing	Zulch.
Bates, C. N	College	El Campo.
Benbow, Susie	Normal	Bryan.
Bernheim, A. G	Normal	Galveston.
Black, R. C	College	Skidmore.
Boyett, D. C	Normal	Bryan.
Bradford, B. L	Rural Life	Boyd.
Breeding, W. C	Cotton Classing	Lexington, Okla.
Briggs, R. W	College	New Orleans, La.
Brunkenhoefer, E	Cotton Classing	Weimar.
Bryan, L. L	College	Glen Rose.
Bryant, O. T	Normal	Toyah.
Burke, J. K	Cotton Classing	Estacado.
Cape, H	Cotton Classing	San Marcos.
Cavallin, G. L	Cotton Classing	Olivia.
Cerf, A	Cotton Classing	Waxahachie.
Chastain, Bessie	Normal	College Station.
Cherry, Mrs. R. E	Normal	Hightower.
Conlee, Pansy	Normal	Bryan.
Conway, O	Normal	Bryan.
Cook, W. B	Normal	Bryan.
Cothran, A. B	Normal	Wellborn.
Craig, S. R	College	El Campo.
Crim, W. B	Cotton Classing	Henderson.
Demmer, R. C	Cotton Classing	Woodsboro.
Denison, J. S	College	Temple.
Earnest, L. H	College	Laredo.
Ehlers, E. A	Cotton Classing	San Antonio.
Eldridge, H	College	Pineland.
Ellis, J. L	Cotton Classing	Oakville.
Evans, H. M	Cotton Classing	Quail.
Fechner, R. C	Cotton Classing	Yorktown.
Fischer, Mrs. N. E	Normal	Brenham.
Friley, O. P	Normal	Huntsville.
Galliford, W. T	College	College Station.
Gandy, Grace	Normal	Bryan.
Gandy, W. S	Cotton Classing	Robstown.
Gatlin, H. R	Cotton Classing	Rice.
Giles, Mary Virginia	Rural Life	Waco.
Glove, T	Cotton Classing	Nixon.
Goen, P. S	Normal	Bryan.
Griffen, Gladys	Normal	Brenham.
Grizzard, W. B	Cotton Classing	Cuero.
Hale, W. N	Cotton Classing	Rockdale.
Haley, Mrs. M. M	Cotton Classing	Cleburne.
Hall, Nellie	Normal	Hightower.

Hanna, Bernice	Normal	Bryan.
Hanna, Blanche Beatrice	Normal	Bryan.
Harris, Edna Leta	Normal	Bryan.
Harz, H. R	Cotton Classing	Boerne.
Hearne, B. W	Cotton Classing	Palestine.
Hintner, D	Normal	Talpa.
Horner, J. L	Normal	Tyler.
Hyland, Kathlyn M	Normal	College Station.
Hurley, W. M	Cotton Classing	Melon.
Ingram, C	Cotton Classing	Red Rock.
Jelks, V. F	Rural Life	Yoakum.
Johnson, S. J	Cotton Classing	Cooper.
Jones, O. D	Cotton Classing	Terrell.
Keefer, A. H	Cotton Classing	North Zulch.
Keen, C. A	Rural Life	Sylvester.
Kenner, W. M	Cotton Classing	Waxahachie.
Kern, Virginia	Normal	Bryan.
Kimbell, A	Cotton Classing	Ennis.
Kosarek, Clara	Normal	Bryan.
Kronauer, C	Cotton Classing	Houston.
Ladner, N. L	Cotton Classing	Yorktown.
Lang, E. E	Normal	Kurten.
Lawless, Annie	Normal	Kurten.
Lawrence, F. E	Cotton Classing	Waxahachie.
Lawson, T. E	Cotton Classing	Annona.
Lesosky, Zelma	Normal	Cameron.
Linden, W	Rural Life	Von Ormy.
Lively, B. A	Cotton Classing	Tyler.
Lloyd, Lillian	Normal	Bryan.
Lyday, Steve D	Cotton Classing	Ravenna.
McCallum, Minnie	Normal	Tabor.
McDaniel, G. E	College	Mertens.
McDuffie, A	Cotton Classing	Waxahachie.
McFaddin, W. R	Cotton Classing	Marianna.
McIver, T	Normal	Normangee.
McMurrey, J. D	Normal	Cuero.
McNair, D. C	Cotton Classing	Waxahachie.
McNew, J. L	College	Mineral Wells.
McVey, Bettie	Normal	Bryan.
Manning, G. S	Cotton Classing	Hamilton.
Martin, D. E	College	Waxahachie.
Marshall, Margaret	Rural Life	Longview.
Mathis, Mrs. R. J	Rural Life	Alice.
Meads, R. C	Normal	Bryan.
Moore, J. P	Cotton Classing	Holdenville, Okla.
Morgan, G. B	College	Greenville.
Mullin, R. E	Cotton Classing	Fort Worth.
Murray, J. D	Cotton Classing	Poteau, Okla.
Myrick, S	Rural Life	Cisco.
Nislar, O. L	Cotton Classing	Gainesville.
Nussle, C. J	Rural Life	Brady.
Oates, H. B	Normal	Newark.
Page, Jessie	Normal	Hightower.
Pate, J. E	Normal	Bryan.
Patton, R. G	Cotton Classing	Waco.
Person, L. K	Cotton Classing	Garland, Ark.
Pirie, W. D	Rural Life	San Antonio.
Poe, Bonnie	Normal	Carbon.
Porter, H. A	Cotton Classing	Harwood.
Porter, T. S	Normal	Boyd.
Pottorff, C. H	Cotton Classing	Tipton.
Prestridge, K. K	College	Alvarado.
Prewitt, E. L	Cotton Classing	Kleburg.
Reid, J. J	Normal	Bryan.
Rogers, E. O	Cotton Classing	Thornton.

von Rosenberg, F. A	Rural Life	Hallettsville.
Ross, H	Normal	Del Valle.
Rowe, W. B	Cotton Classing	Houston.
Russell, J. I	Cotton Classing	Hico.
Ryrson, Mrs. L. T	Normal	Gause.
Sallis, Pauline	Normal	Brenham.
Savage, M. E	College	Florence.
Seelhorst, Bertha	Normal	Brenham.
Sheffield, J. R	Cotton Classing	Teague.
Shultz, H. H	Cotton Classing	Hearne.
Sladczyk, A	Cotton Classing	San Antonio.
Smith, C	Cotton Classing	Melvin.
Smith, T. T	Cotton Classing	Melvin.
Smith, W. A	Rural Life	Galveston.
Smith, W. G	Cotton Classing	Karnes City.
Spinks, M. L	Rural Life	Harmony.
Stephens, W. H	Cotton Classing	Vernon.
Stephenson, H. A	Cotton Classing	Beeville.
Stockton, H. P	College	Louise.
Tatum, C. S	Cotton Classing	College Station.
Tatum, Mrs. C. S	Normal	College Station.
Taylor, Miss Ray	Normal	Bryan.
Taylor, Rosalie	Normal	Bryan.
Tenney, Mildred	Rural Life	College Station.
Tenney, W	Cotton Classing	College Station.
Thorp, G. H	Cotton Classing	Mansfield, La.
Tidwell, M. L	Cotton Classing	Mexia.
Torrents, C. M	Rural Life	San Juan.
Trickey, C. T	College	Sanger.
Ulrich, J. V	Cotton Classing	Sugarland.
Waite, V. B	Normal	Bryan.
Waldrop, R. H	Cotton Classing	Teague.
Walker, A. A	College	Rockwall.
Walker, J. T	College	Azle.
Walker, Una Mae	Normal	Bryan.
Wallis, J. C	Cotton Classing	Rockdale.
Watson, Allie J	Normal	Oakwood.
Watts, J. C	Rural Life	Abilene.
Weaver, L. F	Cotton Classing	Waxahachie.
Weaver, S. C	Rural Life	Nacogdoches.
Webb, J. E	College	Bryan.
Westbrook, E	Cotton Classing	Waco.
White, H. H	Rural Life	Keller.
White, Mary	Rural Life	Sayre, Okla.
Williams, Orlena Elizabeth	Normal	Bryan.
Wilson, R. Z	Cotton Classing	Normangee.
Wotipka, Lillian	Normal	Caldwell.
Zimmerman, Annie	Normal	Bryan.

SHORT COURSE FOR FARMERS, 1916.

Acker, H	Whitehouse.
Adams, S. E	Memphis.
Aker, F	Grandview.
Aker, Mrs. R	Grandview.
Allison, H. R	Carthage.
Amonette, Mable	Hutchins.
Arnold, L. F	McKinney.
Axtell, D. B	Magnolia.
Bagwell, Mrs. C	Wharton.
Baird, Nelle L	Dallas.
Baker, Mrs. J	Austin
Baldridge, J. R	Graball.
Baldridge, Mrs. J. R	Graball.
Bancroft, E. W	Orange.

Bancroft, G. W	Orange.
Bankhead, Bessie W	Weatherford.
Bankhead, Ruby L	Weatherford.
Banzhof, G	Rockdale.
Barron, D. N	Dallas.
Bass, Cleo	Leesburg.
Beeson, W. B	Nacogdoches.
Bell, A. K	Gonzales.
Bell, Mrs. E. S	Gonzales.
Benton, N	Amarillo.
Berry, Ruth	Mesquite.
Bertram, Le Roy	Waxahachie.
Beseda, H. E	Port Lavaca.
Biggs, F. W	McDade.
Biggs, Pattie D	McDade.
Bigony, W. M	Groesbeck.
Birdwell, Eunice	Nat.
Blackburn, Fay	Waxahachie.
Blair, Lola A	Mesquite.
Bocker, Lillie	Gay Hill.
Bowen, Francis J	San Antonio.
Boynton, Mamie F	Alice.
Branson, G. F	Dallas.
Bruce, Mattie	Waxahachie.
Bruton, Thelma	Mesquite.
Burton, W	Arlington.
Cadenhead, A. R	Kirbyville.
Caldwell, R. E	Corpus Christi.
Calvert, W. C	Sweetwater.
Camp, Mary	Garland.
Campbell, J	Holliday.
Canada, J. W	La Porte.
Cates, E	Memphis.
Chaney, A. T	Mineral Wells.
Chaney, N. C	Marlin.
Chisum, Effie	Woden.
Chitwood, Ida	Bonham.
Clapp, Louise	Collegeport.
Clapp, H. A	Collegeport.
Clark, G. T	Waco.
Click, Mrs. M	Beeville.
Cloud, Mrs. J. C	Bryan.
Colley, Eula E	Mesquite.
Collier, C. M	Goliad.
Combs, Jesse M	Kountze.
Conway, Agnes	Bryan.
Cook, Ira M	Bryan.
Costilow, S. H	Bedias.
Cotton, A. J	Llano.
Countz, D	Huntsville.
Cox, E. T	Eastland.
Craddock, F. J	Denton.
Craft, J. M	Bastrop.
Cunningham, W. M	Greenville.
Cunyus, J. P	Longview.
Dasch, Eva	Mesquite.
Daugherty, M. M	Austin.
David, M	Belmont.
Davidson, Addie B	New Boston.
Davis, C. J	Corsicana.
Davis, Mrs. G	Waxahachie.
Davis, W. E	Austin.
Deabler, C. H	Dayton.
Dennis, Jesse	Memphis.
Desel, J. A	Dickinson.

Detwiler, F	Swearingen.
Detwiler, Goldie F	Swearingen.
Detwiler, G. G	Swearingen.
Donovan, C. A	Grand Prairie.
Drake, J. G	Lockport.
Dulin, W. A	Colorado.
Dunaway, Francis	Waxahachie.
Durrenberger, I. A	Pearsall.
Eaton, D. F	Comanche.
Eberhardt, Elizabeth	Rising Star.
Edinburgh, B	Huntsville.
Edinburgh, Mrs. M	Huntsville.
Edmonds, J. R	Quitman.
Ellis, Ira	Edgewood.
Elrod, R. P	Gatesville.
Engelhard, F	Eagle Lake.
Erickson, J. H	Greenville.
Ertel, F. F	Rockdale.
Esentraut, J. C	Beaumont.
Eubank, L	Mabank.
Eudaly, G. W	Fort Worth.
Evans, J. A	College Station.
Evans, R	Rosebud.
Evard, A. M	Rockdale.
Ewen, J. W	Memphis.
Farnan, J. J	New York, N. Y.
Felder, Mrs. R. K	Chapel Hill.
Felder, R. L	Chapel Hill.
Ferguson, Mrs. C	Corsicana.
Fincher, Ruby R	Columbus.
Fitzhugh, Lura	Arlington.
Floyd, Buna	Waxahachie.
Floyd, Delta D	Waxahachie.
Floyd, Euna	Waxahachie.
Foreman, T	Memphis.
Foster, A	Carthage.
Foster, D. M	Carthage.
Franklin, J	Memphis.
Frazier, Daisy M	Springfield.
Freel, P	Memphis.
Frese, W. H	Waco.
Frysinger, G. P	Cleburne.
Frysinger, Mrs. G. P	Cleburne.
Fulks, Nannie M	Waxahachie.
Funderburk, R	Brownwood.
Gallier, R. A	Orange.
Gaston, Mrs. B	Jefferson.
Gearreald, N	Goodnight.
Gentry, E	Mineola.
Gentry, H	Palestine.
Gilbert, H. M	Kirbyville.
Gillespie, R	Palacios.
Givens, Mabel	Dallas.
Glenn, E	Ennis.
Glenn, Ida M	New Ulm.
Glenn, O	Kleburg.
Goode, W. H	Tennessee Colony.
Goree, R. C	Knox City.
Gracey, Ollie	Dallas.
Graham, A. O	Dallas.
Graham, A. G	El Paso.
Greene, C. A	Comanche.
Green, O. W	Comanche.
Greer, J. D	Nacogdoches.
Griffin, Byrdie	Burkburnett.

Griffin, G	Rosebud.
Griffin, J. W	San Saba.
Griffin, Mrs. J. W	San Saba.
Grooms, J. S	Hedley.
Grote, H. F	Mason.
Gruss, E. W	Galveston.
Guillot, Ann R	Dallas.
Hafer, A	Brenham.
Hale, Ethel E	Coleman.
Hall, J. I	Stamford.
Hall, R. A	Hightower.
Hammonds, Linnie	Mt. Pleasant.
Hancock, R. I	Waco.
Hand, W. G	San Antonio.
Haney, M. W	De Leon.
Hare, R. F	Plainview.
Harrell, M	Memphis.
Harrington, J. H	Mineral Wells.
Herbelin, B. J	Lometa.
Herridge, T. D	Lone Grove.
Hester, Gertrude H	Gonzales.
Hickey, Lily Belle	Comanche.
Hill, M	Alice.
Holland, M. W	Dallas.
Holloway, Mary L	Victoria.
Holly, Irene	Wichita Falls.
Hostetler, Lillie	Bellaire.
Hudgins, Grace Maurine	Mesquite.
Huffaker, Edna	Bonham.
Hunter, L. T	Wellington.
Hurley, W. M	Melon.
Ingram, Helen K	Dayton.
Jamison, J. T	Dayton.
Jenkins, G	Sherman.
Jett, Mignonette	Seagoville.
Johnson, J. R	Cooper.
Johnson, L. L	Bryan.
Jolley, Mrs. N	Waxahachie.
Jones, Cornelia	Leggett.
Jones, Sibyl	Harleton.
Kalb, Benigna C	Houston.
Kelley, Mary	Harwood.
Kelso, Norma	Gonzales.
Kelso, Ruby	Gonzales.
Kent, Mrs. N. B	Waco.
Kinnard, A. W	Caldwell.
Kirby, Mrs. R. L	Dallas.
Kirby, R. W	Dallas.
Kloppenburg, Cecilia	Sublime.
Kloppenburg, J	Kingsville.
Kobs, C. F	Addicks.
Kobs, G	Addicks.
Kobs, W. F	Addicks.
Kolberg, O. G	Eagle Lake.
Lackey, V. W	Cuero.
Lampkin, Hattie	Ennis.
Latimer, Mrs. Gussie	Marshall.
Lea, W. E	Orange.
Leslie, M	Orange.
Lester, Sadie	Gonzales.
Leyendecker, Carrie	New Ulm.
Libby, H. T	Alvin.
Locke, Mary	Zack.
Lown, F. D	Cotulla.
Luker, C	Proctor.

Luker, W. A	Proctor.
Lumpkins, Nina	Ennis.
Lund, F. P	Midfields.
Lynn, C	Amphion.
McCoy, Mrs. B	Port Arthur.
McDowell, C. H	Beeville.
McGregor, J. I	Houston.
McIver, Rosa	Houston.
McKibbin, R. E	Conroe.
McLelland, G. P	Jourdanton.
McMaster, W	Clarksville.
McMasters, W. C	Pasadena.
Maddox, Mary S	Weatherford.
Mally, F. W	Laredo.
Mann, R. E	Childress.
Marks, E. H	Addicks.
Marks, T. M	Jacksboro.
Marr, T. F	Hubbard.
Marshall, Beulah A	Dallas.
Martin, B. B	Liberty.
Martin, Mrs. B. B	Liberty.
Martin, Mrs. Lula P	Stephenville.
Martindale, Cara C	Lockhart.
Mason, Bess F	Nacogdoches.
Mathis, R. J	Alice.
Mathis, Mrs. R. J	Alice.
Mathis, Winnie	Bryan.
Matthews, D	Athens.
Means, H. M	Vernon.
Melton, M. E	Allen.
Mercer, Naomi	Mt. Pleasant.
Merwin, C	Jasper.
Metcalfe, T. P	Amarillo.
Midkiff, W. M	Memphis.
Milentz, C. A	Rock Island.
Miller, W. Z	Edinburg.
Mills, E	Lamarque.
Minderman, H	Electra.
Minear, S. A	Abilene.
Mitchell, W	Cross Plains.
Moffett, T. E	Dilley.
Monnier, Madeline	Dallas.
Moore, L. L	Wharton.
Moore, Nellie	Nat.
Moore, W. U	Reagan.
Morris, C. C	Pittsburg.
Moser, C. O	Dallas.
Mouzingo, B. B	Lovelady.
Murphree, Mrs. S. D	Mt. Pleasant.
Myrick, R	Lubbock.
Neckert, Hulda	Dallas.
Neely, Imogene	Roscoe.
Neubauer, Mrs. E	Riviera.
Normand, Hallie C	Belton.
North, E	Yoakum.
North, W. J	Yoakum.
Orms, G. W	Mineola.
Oslin, J. C	Galveston.
Page, J. H	Carthage.
Paine, T. J	Saratoga.
Parker, O	Wichita.
Parker, T. A	Beaumont.
Patterson, Mrs. J. P	Tyler.
Payne, M. T	San Antonio.
Pearce, Lilla L	Jourdanton.

Peck, J. E	Star.
Peeler, T. L	Campbellton.
Pennybacker, B	Austin.
Perkins, Jess	McKinney.
Person, R. W	Bay City.
Peterson, V	Galveston.
Phillips, F. R	Rusk.
Pipkin, J. A	Waco.
Plaster, W. M	Bedias.
Polley, E. A	Chilton.
Pomeroy, J. E	Pasadena.
Pope, H	Long Branch.
Prewitt, Alice	Kleburg.
Prewitt, E. L	Kleburg.
Prince, A. H	Orange.
Quicksall, J. F	Cleburne.
Quicksall, J. L	Waco.
Quicksall, J. L., Jr	Waco.
Rae, C. S	Talpa.
Ragsdale, J. W	Waco.
Ramsey, W. H	Bay City.
Rarick, Bessie M	Huntsville.
Ray, Mrs. L	Bryan.
Rae, Stella	Midlothian.
Reed, B. W	Clayton.
Reid, Annie E	Fairbanks.
Reid, Florence	Fairbanks.
Reid, Orphie	Fairbanks.
Richardson, J. S	Belton.
Richter, H. L	Gonzales.
Robbins, J. P	Reagan.
Robbins, W. G	Reagan.
Roberts, Lola	Stephenville.
Roche, T	Victoria.
Ross, W. H	Dallas.
Rountree, Hazel	Garland.
Ryall, Z. W	Jasper.
Sanders, W. O	Bryan.
Sanford, Mrs. D. H	Rockdale.
Saxon, Lillie	Bryan.
Schaper, F	Houston.
Schendel, Clara	Iago.
Schendel, Lydia	Iago.
Scheske, A. E	Gonzales.
Schmeltz, Mrs. W	Houston.
Scott, V. L	Marshall.
Sebesta, J. S	La Grange.
Simon, G. C	Beaumont.
Skiles, Mary A	Richardson.
Slaughter, J. W	Dallas.
Smith, A. B	Wellington.
Smith, C. R	Houston.
Smith, G. A	Beaumont.
Smith, Mrs. M	New Baden.
Smith, Myrtle	Midlothian.
Smith, Pearl	Mesquite.
Stallings, W. L	Houston.
Stanford, J. E	Jefferson.
Stromeyer, Amanda	Riviera Beach.
Stulting, Mrs. A	Gonzales.
Stulting, Lela M	Gonzales.
Sullivan, J. G	Asherton.
Sullivan, Mrs. J. G	Asherton.
Summers, Nona	Mesquite.
Sumrall, L. G	Brenham.

Symonds, W. S	Fairfield.
Symonds, Mrs. W. S	Fairfield.
Tannich, V. F	El Campo.
Tate, R	Forreston.
Templeton, C	Rockwall.
Tipton, J	Waco.
Tisdal, N. R	Huntsville.
Tisdal, Mrs. N. R	Huntsville.
Tom, Mrs. C. F	Collinsville.
Tom, E. J	Campbellton.
Townsend, E. G	Belton.
Townsend, W. E	Port Arthur.
Traubridge, F. B	Floydada.
Trigg, C	Childress.
Trigg, Mrs. E. W	Denton.
Trousdale, P	Alice.
Turnipseed, Edna	Waxahachie.
Uhl. A. W	Dallas.
Uhl, C. S	Dallas.
Uhl, Emma B	Dallas.
Vandiver, M. H	Canton.
Vankirk, A. S	Bonham.
Vaughn, T. H	Long Branch.
Vick, C. S	Saratoga.
Wagner, Hazel	Aldine.
Walker, W. H	Llano.
Waugh, Gertrude	El Campo.
Whalan, Katherine	Gonzales.
Wilkinson, J. S	Newark.
Wilkinson, L. C	Edna.
Wilkerson, Mary	Edna.
Williams, H	Mesquite.
Williams, Kate	Weatherford.
Williams, S	Clarendon.
Wilson, D	Tolbert.
Wilson, J. T	Clarendon.
Winters, M. E	Angleton.
Wirschkaemper, H	Victoria.
Wolf, Esther M	Olney.
Wolfe, Annie	Mineral.
Wooten, J. H	Columbus.
Worthington, G. E	Mesquite.
Young, Mrs. L	Stephenville.
Youngblood, T	Belton.
York, O. C	Lincoln.

WINTER SHORT COURSE IN BUTTER MAKING, 1917.

Bain, H. H	Plainview.
Barnett, C. R	Yoakum.
Burk, H	Shiner.
Emmrich, F. A	Giddings.
Finger, M. A	Comanche.
Frnka, J	New Ulm.
Hollub, A	Weimar.
Hooper, J. F	Houston.
Light, W. H	Weatherford.
Phinney, I. S	Clifton.
Waldrip, C. J	Gonzales.

SUMMARY OF ENROLLMENT, SESSION 1916-1917.

REGULAR COURSES.

Class.	Agr.	Sci.	Arch.	AE.	ChE.	CE.	EE.	GE.	ME.	MiE.	TE.	VM.	Total
Graduate	5	..	..	..	..	1	..	..	..	..	..	..	6
Senior	82	..	10	..	1	21	33	..	11	..	2	..	160
Junior	79	..	2	1	3	18	11	..	9	..	6	..	129
Sophomore	56	5	3	1	6	27	16	..	14	4	3	..	135
Freshman	137	15	8	4	18	31	61	2	27	10	3	9	325
Special	63	6	2	..	1	4	3	9	2	..	2	..	92

TWO-YEAR COURSES.

	C	D	E	F	G	H	M	
Second Year	33	22	4	8	3	3	..	73
First Year	98	85	86	27	5	9	12	322
Total, Regular Session								1242

Regular Session			1242
Summer Session, 1916:	College	21	
	School of Cotton Classing	71	
	Normal	52	
	Rural Life School	19	
			163
Summer Short Course for Farmers, 1916			385
Winter Short Course in Butter Making, 1917			11
			1801
Less duplicates			34
Grand total, 1916-17			1767

DEGREES AND HONORS CONFERRED AT THE FORTIETH ANNUAL COMMENCEMENT.

(June 13, 1916.)

MASTER OF SCIENCE.

Thomas Graves Cherry,
B. S., A. and M. College of Texas, 1915.

ELECTRICAL ENGINEER.

Roy Lester Young,
B. S., A. and M. College of Texas, 1915.

MECHANICAL ENGINEER.

John Anderson Herrington,
B. S., Mississippi A. and M. College, 1906.

BACHELOR OF SCIENCE.

In Agriculture.

Braumiller, W. E.
Bruce, A. D.
Bull, A. C.
Burns, D.
Carleton, H. C.
Casey, A. C.
Cole, R. J.
Collins, W. A.
Conner, J. A.
Crawford, V. W.
Daugherty, M. M.
Dennis, L. C.
Ehlert, J. F.
Eschenburg, A. C.
Foster, C. J.
Garrett, M. T.
Graham, C. E.
Gunn, C. H.
Hall, R. A.
Hanson, W. K.
Hausser, C.
Heldenfels, G. C.
Helm, D. L.
Henry, J. L.
Hill, M. E.
Hudson, G.
Johnson, A. D.
Jones, L. P.
Keasler, T. F.
Killough, H. B.
Knolle, M.
McGilberry, A. E.
McGregor, J. I.
McIver, J. D.
Malloy, H. P.
Martin, C. B.
Menke, E. P.
Metcalfe, P. B.
Meyer, J. V.
Miller, H. E.
Moffett, G. C.
Mogford, J. S.
Morris, T. K.
Moses, A.
Nisbet, W. R.
Pedigo, M. S.
Perkins, P. R.
Pierson, J. C.
Porter, T. S.
Ray, P. F.
Richardson, J. S.
Robert, J. B.
Skeeler, W. J.
Slay, C.
Smith, L. M.
Tanner, C.
Thaxton, R. C.
Thomason, J. H.
Torti, M. L.
Vance, J. W.
Wellage, G. F.
Witcher, L. V.
Wooten, R. H.

In Architecture.

Brown, J. D.
Haynes, S. B.
von Rosenberg, L. A.
Schornstein, R. M.

In Architectural Engineering.

Camp, T. R.
Easley, C. M.
Fuess, C. A.
Hawkins, A. R.

In Chemical Engineering.

August, L. H.
Kelly, D. C.
Beringer, M. S.
Murphy, W. M.
Hollingshead, F. A.

In Civil Engineering.

Abernathy, M. A.
Brigance, G.
Burkett, F.
Cornett, G. J.
Curnutte, J. V.
Hagaman, L. H.
Hawes, R.
Olson, P. H.
Owen, A. G.
Riesner, E. L.
Rosenfield, J. L.
Sawyer, H. A.
Short, J. C.
Stephens, U.

In Electrical Engineering.

Baccus, E. D.
Coleman, F. R.
Crocker, W. J.
Davis, W. K.
Dickie, A.
Hefner, C. B.
Jarrett, E. L.
Kristek, G. H.
MacFadden, S. P.
Meriwether, G. C.
O'Brien, F.
Patterson, E. B.
Sinclair, W. C.
Singletary, H. H.
Stoner, C. D.
White, J. E.

In Mechanical Engineering.

Aldridge, E. E.
Braumiller, N. M.
Clarke, H. S.
Forsyth, W. R.
Hobbs, L. S.
Olson, O. R.
Pinkston, L. A.
Robertson, J. M.
Sramek, J. N.
Wilson, C. S.

In Textile Engineering.

Runge, H. E.

CERTIFICATES IN TWO-YEAR COURSES.

In Agriculture.

Arnold, L. L.
Cone, J. C.
Cothran, A. B.
Dodson, J. S.
Downing, J. S.
Johnson, T. E.
Jones, C. C.
Lusby, H. P.
McAshan, R. H.
Nichols, R. V.
Ray, C. H.
Reily, J. M.
Seals, C. R.
Sides, W. K.
Skinner, H. W.
Teague, C. L.
Thomson, J. T.
Volz, A. F.
Walker, J. H. B.
Walker, L. S.
Ward, M. F.

For Electricians.

Austin, J. L.
Cook, W. O.
Copeland, J. S.
P'Pool, H. O.
Sengelmann, S. S. H.
Wendler, E.

For Power Plant Operators.

Deats, L. E.
Jalufka, J. W.

In Textile Engineering.

Garza, J. L.
Japhet, D. E.

SUMMARY OF DEGREES CONFERRED.

Advanced Degrees:		
Master of Science	1	
Electrical Engineer	1	
Mechanical Engineer	1	
		3
Baccalaureate Degrees:		
B. S. (In Agriculture)	63	
B. S. (In Architecture)	4	
B. S. (In Architectural Engineering)	4	
B. S. (In Chemical Engineering)	5	
B. S. (In Civil Engineering)	14	
B. S. (In Electrical Engineering)	16	
B. S. (In Mechanical Engineering)	10	
B. S. (In Textile Engineering)	1	
		117
Total		120

DISTINGUISHED STUDENTS.

(Session 1915-16.)

At the end of each session students who have during the year received no term grade below B, and have no deficiency in practice, shall be announced as "Distinguished."

FRESHMAN CLASS.

Breckenridge, L. D.
Hardwicke, J. B.

SOPHOMORE CLASS.

Bates, W. W.
Warren, G. R.
Wythe, L. D.

JUNIOR CLASS.

Briggs, R. W.
Cook, W. B.
Deputy, O. D.
Thomas, E. W.

SENIOR CLASS.

Camp, T. R.
Crocker, W. J.
Daugherty, M. M.
Dennis, L. C.
Foster, C. J.
Garrett, M. T.
Gray, O. S.
Hall, R. A.
Hawkins, A. R.
Helm, D. L.
Hobbs, L. S.
Keasler, T. F.
Killough, H. B.
MacFadden, S. P.
Metcalfe, P. B.
Nisbet, W. R.
Olson, P. H.
Owen, A. G.
Pierson, J. C.
Vance, J. W.
Wooten, R. H.

First Year of the Two-Year Courses.

Appling, G. S.
Arnold, R. B.
Biskamp, E. J.
Heep, H.
Messenger, F.
Parke, M. L.
Stiles, M.
Waltman, D. W.

Second Year of the Two Year Courses.

Downing, J. S.
P'Pool, H. O.

MILITARY ORGANIZATION, SESSION 1916-1917.

The Corps of Cadets is organized as a Band and two Regiments of Infantry of two Battalions of four Companies each.

Captain C. H. Muller, U. S. Cavalry, Professor Military Science and Tactics. Commandant.

First Lieutenant W. H. H. Morris, Jr., Assistant Professor Military Science and Tactics. Assistant Commandant.

DRILL INSTRUCTORS AND TACTICAL OFFICERS.

James M. Kenny, R. Q. M. Sergeant, U. S. Army, Retired;
George Smart, First Sergeant, U. S. Army, Retired;
John C. Hyland, Ordnance Sergeant, U. S. Army, Retired;
Winfred E. Littleton, Sergeant, Engineers Unassigned, U. S. Army;
Fred Walters, Sergeant, Infantry Unassigned, U. S. Army;
John Bierman, Sergeant, Infantry Unassigned, U. S. Army.

NIGHT SERGEANTS.

John J. Howard, First Sergeant, U. S. Army, Retired;
Francis Tyler, First Sergeant, U. S Army, Retired.

ASSIGNMENT TO ORGANIZATIONS.

J. Shelton, Colonel, Commanding Corps.
O. S. Gray, Captain, Corps Adjutant.
D. B. Milner, Captain, Corps Supply Officer.
H. J. Kennard, Corps Sergeant Major.
J. B. Miller, Chief Trumpeter.

Band.

G. B. Hanson, Captain, Commanding Band.
M. Blankfield, First Lieutenant.
J. M. Burkett, Second Lieutenant.
G. C. Dodd, First Sergeant.
Weaver, A. B., Sergeant.
Cooper, F. A., Sergeant.
Leffel, R. C., Sergeant.
Tuerpe, E. C., Corporal.
Alexander, W. R., Corporal.
Murrah, F. V., Corporal.
Appling, G. S.

First Regiment.

S. F. Craig, Lieutenant Colonel, Commanding Regiment.
F. W. Halsey, Captain, Regimental Adjutant.
O. F. Zedler, Captain, Regimental Supply Officer.
E. B. Cartwright, Captain, Regimental Supply Officer.
F. L. Bramlette, Captain Unassigned, Attached.
J. Berry, Captain Unassigned, Attached.
L. E. Priester, Regimental Sergeant Major.
C. C. Jobson, Regimental Supply Sergeant.
E. E. Rigney, Regimental Color Sergeant.

First Battalion, First Regiment.

C. T. Trickey, Major, Commanding Battalion.
N. E. Gardner, First Lieutenant, Battalion Adjutant.
R. L. Chappelle, Second Lieutenant, Battalion Supply Officer.
A. Oliver, Battalion Sergeant Major.

Company A.

J. A. Otto, Captain, Commanding Company.
J. F. Blanton, First Lieutenant.
W. B. Curtis, Second Lieutenant.
J. W. Duke, First Sergeant.
Staerker, O., Sergeant.
Shiner, V. J., Sergeant.
Martin, E. C., Sergeant.
Schiller, I., Sergeant.
Hoppe, R. C., Sergeant.
Wills, J. V., Corporal.
Dodd, H. T., Corporal.
Long, R. N., Corporal.
Hancock, P., Corporal.
Davis, G. M., Corporal.

Company B.

J. T. Walker, Captain Commanding Company.
N. L. Peters, First Lieutenant.
B. R. Avent, Second Lieutenant.
F. E. Whitely, First Sergeant.
Tighe, L. T., Sergeant.
Snow, O. L., Sergeant.
Walker, J. K., Sergeant.
Freeman, C., Sergeant.
Nussbaum, C. A., Sergeant.
Lyne, E. S., Trophy Sergeant.
Tooley, R. P., Corporal.
Stevens, D. L., Corporal.
Moore, Lewis B., Corporal.
Schaer, R., Corporal.
Fenner, W. B., Corporal.

Company C.

R. D. Elliott, Captain,
Commanding Company.
D. S. Buchanan, First Lieutenant.
E. K. Flach, Second Lieutenant.
J. C. McKimmey, First Sergeant.
Davis, T. J., Sergeant.
Melton, J. H., Sergeant.
Tumlinson, O. G., Sergeant.
Regenbrecht, F., Sergeant.
Clayton, H. M., Corporal.
Armstrong, W. H., Corporal.
Gibbens, J. D., Corporal.
Wiedenfield, B. L., Corporal.
Frnka, B., Corporal.
Rees, A. B., Corporal.

Company D.

F. W. Wilson, Captain,
Commanding Company.
E. P. Hubbard, First Lieutenant.
G. A. Woody, First Lieutenant (Attached).
J. A. Barton, Second Lieutenant.
C. L. Taliaferro, First Sergeant.
Moore, D. S., Sergeant.
Boyd, C. T., Sergeant.
Moses, R. L., Sergeant.
Sanders, A. N., Sergeant.
Hensarling, A., Sergeant.
Sherrill, W. C., Corporal.
Dickie, G. D., Corporal.
Jacobson, H. H., Corporal.
Wier, H. B., Corporal.
Wiesen, T. F., Corporal.

Second Battalion, First Regiment.

O. D. Deputy, Major, Commanding Battalion.
S. B. Dyer, First Lieutenant, Battalion Adjutant.
H. F. Corry, Second Lieutenant, Battalion Supply Officer.
J. B. R. Leary, Battalion Sergeant Major.

Company E.

M. J. Conway, Captain,
Commanding Company.
J. R. Barnes, First Lieutenant.
J. B. Cockrell, Second Lieutenant.
A. J. Seargeant, First Sergeant.
Brunnemann, F. C., Sergeant.
Ford, M. H., Sergeant.
Sneed, P. L., Sergeant.
Wipprecht, C., Sergeant.
Howell, D. W., Corporal.
Foley, R. F., Corporal.
Gardner, J. E., Corporal.

Company F.

T. B. Cochran, Captain,
Commanding Company.
C. F. Braunig, First Lieutenant.
M. Mitchell, Second Lieutenant.
G. C. Morris, First Sergeant.
Born, J., Sergeant.
Kenan, W., Sergeant.
Bone, L. B., Sergeant.
Eldridge, H., Sergeant.
Judd, F. W., Sergeant.
Cassity, J. H., Corporal.
Livingston, W. E., Corporal.
Adkisson, A. W., Corporal.
Brady, V. R., Corporal.
Robertson, A. L., Corporal.

Company G.

S. L. Metcalfe, Captain,
Commanding Company.
S. D. Hervey, First Lieutenant.
P. B. Dunkle, First Lieutenant (Attached).
D. L. Hook, Second Lieutenant.
C. M. Harvin, First Sergeant.
Seymour, S. K., Sergeant.
Meyers, H. S., Sergeant.
Bittle, G. M., Sergeant.
Britton, J. W., Corporal.
Hardwicke, J. B., Corporal.
Humphreville, G. D., Corporal.
Wiseman, W. H., Corporal.

Company H.

W. T. Barbee, Captain,
Commanding Company.
J. P. Peutet, First Lieutenant.
A. C. Perrin, Second Lieutenant.
J. W. Grace, First Sergeant.
Kimbell, A., Sergeant.
Slagle, R. L., Sergeant.
Maxwell, W. W., Sergeant.
Mogford, F. W., Sergeant.
Casstevens, G. L., Corporal.
Glenn, V. B., Corporal.
Champion, D. A., Corporal.
Conover, M. D., Corporal.
Carper, M. E., Corporal.

Second Regiment.

J. B. Joyce, Lieutenant Colonel, Commanding Regiment.
B. G. Moreland, Captain, Regimental Adjutant.
L. H. Earnest, Captain, Regimental Supply Officer.
W. T. Swink, Captain, Regimental Supply Officer.
J. C. Rogers, Regimental Sergeant Major.
B. F. Looney, Regimental Color Sergeant.

First Battalion, Second Regiment.

W. O. Farthing, Major, Commanding Battalion.
H. R. Kerbow, First Lieutenant, Battalion Adjutant.
J. W. Hicks, First Lieutenant, Battalion Adjutant (Attached).
M. B. Gibson, Second Lieutenant, Battalion Supply Officer.
S. F. Hurt, Battalion Sergeant Major.

Company A.

J. A. Darby, Captain,
Commanding Company.
C. C. Allert, First Lieutenant.
H. H. Seele, Second Lieutenant.
R. S. Camp, First Sergeant.
Brotherton, R. A., Sergeant.
Williams, J. W., Sergeant.
Evans, C., Sergeant.
Scrimgeour, W. B., Sergeant.
Smith, A. L., Sergeant.
Givens, B. M., Corporal.
Lawrence, J. M., Corporal.
Burns, D. B., Corporal.
Price, A. J., Corporal.
Amsler, H. M., Corporal.
Thornton, P. B., Corporal.

Company B.

L. L. Kotzebue, Captain,
Commanding Company.
W. C. Lockett, First Lieutenant.
J. B. Rountree, Second Lieutenant.
R. C. Lowry, First Sergeant.
Stevenson, D. A., Sergeant.
Pereira, C. G., Sergeant.
Westerhoff, F. W., Sergeant.
Moore, L. W., Corporal.
Jonas, H. F., Corporal.
Hatley, W. G., Corporal.
Jones, W. O., Corporal.
Gaedcke, G. D., Corporal.

Company C.

J. K. Mattox, Captain,
Commanding Company.
H. A. Jopling, First Lieutenant.
I. G. Moore, Second Lieutenant.
H. C. Knickerbocker, First Sergeant.
Braden, C. C., Sergeant.
Rose, M. A., Sergeant.
Wilhite, R. M., Sergeant.
Saunders, R. F., Sergeant.
Thomas, W. G., Corporal.
Clark, C. H., Corporal.
Masters, H. G., Corporal.
Eckhardt, C. K., Corporal.

Company D.

P. P. Reily, Captain,
Commanding Company.
V. E. Hafner, First Lieutenant.
B. P. Wadley, First Lieutenant (Attached).
M. M. Bridgewater, Second Lieutenant.
T. G. Lipscomb, First Sergeant.
Stearns, R. E., Sergeant.
Lawrence, W. H., Sergeant.
Warren, G. R., Sergeant.
Nash, E. C., Sergeant.
Becker, P. G., Sergeant.
Green, F. L., Corporal.
Hagan, J. A., Corporal.
Heard, C. E., Corporal.
Williamson, J. A., Corporal.
Potter, M. M., Corporal.

Second Battalion, Second Regiment.

R. W. Briggs, Major, Commanding Battalion.
F. A. Crow, First Lieutenant, Battalion Adjutant.
H. P. Stockton, Second Lieutenant, Battalion Supply Officer.
T. R. Brailsford, Second Lieutenant, Battalion Supply Officer (Attached).
F. J. Hockaday, Battalion Sergeant Major.

Company E.

H. H. Rothe, Captain,
Commanding Company.
G. A. Powers, Captain (Attached).
A. J. Bennett, First Lieutenant.
R. C. Black, Second Lieutenant.
J. G. Ervin, First Sergeant.
Crawford, R. D., Sergeant.
Anderson, G. D., Sergeant.
Fahey, M. J., Sergeant.
McKnight, J. B., Sergeant.
Smith, D. L., Corporal.
Scudder, T. E., Corporal.
Bloodworth, J. E., Corporal.
Crawford, C. W., Corporal.
Settegast, M. E., Corporal.
Brooks, E. C., Corporal.

Company F.

D. H. Kiber, Captain,
Commanding Company.
C. H. Fleming, Captain (Attached).
G. E. McDaniel, First Lieutenant.
J. A. Jenkins, Second Lieutenant.
C. M. Copeland, First Sergeant.
Baker, D. E., Sergeant.
Jameson, J. H., Sergeant.
McNew, J. T. L., Sergeant.
Alex, A. H., Sergeant.
Carnahan, L. H., Sergeant.
Denison, J. S., Corporal.
Porter, J., Corporal.
Davidson, G. A., Corporal.
Slemmons, J. E., Corporal.
Lohoefener, A. H., Corporal.
Porter, B. G., Corporal.

Company G.

J. B. Bennett, Captain,
Commanding Company.
A. G. Schmidt, First Lieutenant.
H. McFarland, Second Lieutenant.
F. S. Anderson, First Sergeant.
Hill, R. E., Sergeant.
Morgan, G. B., Sergeant.
Prime, W. F., Sergeant.
Doney, L. C., Sergeant.
Nagle, E. T., Sergeant.
Keasler, M. L., Corporal.
Davis, J. W., Corporal.
Baker, O. G., Corporal.
Abicht, R. R., Corporal.

Company H.

I. Langford, Captain,
Commanding Company.
B. E. Irby, First Lieutenant.
B. M. Nail, Second Lieutenant.
T. F. Kelly, First Sergeant.
Bates, W. W., Sergeant.
Loftus, L. W., Sergeant.
Savage, M. E., Sergeant.
McLean, A. R., Sergeant.
Norment, J. M., Sergeant.
Kunz, A. G., Corporal.
Rueter, W. H., Corporal.
Boyd, W. W., Corporal.
Rasmussen, A. A., Corporal.
Miley, S. H., Corporal.

HOWELL TROPHY.

The Howell Trophy is a Texas Flag presented to the College in 1903 by Mr. W. S. Howell, of Bryan, Texas. A competitive drill is held each year during commencement to determine the best drill company. This company is designated the TROPHY COMPANY and carries the flag during the following session. It is authorized to elect a Trophy Sergeant who is the Color Bearer.

The Trophy Company for the session 1916-17 is Company B, First Regiment.

ALUMNI.

(Association Organized 1886.)

R. J. Potts, '06, Waco	President
Charles Rogan, '79, Austin	First Vice-President
W. W. Washburn, '08, Houston	Second Vice-President
L. J. Kopke, '80, Beaumont	Third Vice-President
F. J. Skeeler, '10, College Station	Secretary-Treasurer

On the following pages are given the names of all graduates of the College, with the courses of study pursued and the degrees obtained; their occupations and residences are also given as far as known. The alumni are requested to aid the Secretary of the Association in making the roll as accurate as possible. Each alumnus should send the Secretary a postal card at the opening of each session, giving his address and occupation.

From the opening of the College in 1876 to its reorganization in 1880, the studies were elective, and led to appropriate degrees. Degrees received in this interval are noted in the list of names.

From 1881 to 1887 there were two prescribed courses, the Agricultural and the Mechanical, but no degrees were given.

From 1888 to 1895 there were four prescribed courses leading to the degrees of Bachelor of Scientific Agriculture (B. S. A.); Bachelor of Civil Engineering (B. C. E.); Bachelor of Scientific Horticulture (B. S. H.); Bachelor of Mechanical Engineering (B. M. E.).

From 1895 to 1901 the four prescribed courses remained the same, but the degree in each was Bachelor of Science (B. S.), the particular course being specified in the diploma.

In 1901 the Horticultural course was merged with the Agricultural. In 1903 the course in Electrical Engineering was added; in 1904, the course in Textile Engineering; in 1905, the course in Architectural Engineering; in 1908, the course in Chemical Engineerng; in 1909, the course in Architecture, making eight regular courses leading to the degree in Bachelor of Science (B. S.), in Agriculture, in Architecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Mechanical Engineering, in Electrical Engineering, in Textile Engineering.

The courses of study are indicated by the use of Roman numerals, as follows:

I. Agriculture.
II. Horticulture.
III. Mechanical Engineering.
IV. Civil Engineering.
V. Electrical Engineering.
VI. Textile Engineering.

VII. Architectural Engineering.
VIII. Chemical Engineering.
IX. Architecture.

Names of deceased alumni are marked with an asterisk.

ABBOTT, E. G., 1894, IV, Captain Coast Artillery, United States Army, Fort Wood, Bedloe's Island, N. Y.
ABBOTT, H. T., 1898, II, Bookkeeper, 4010 Cedar Springs, Dallas.
ABERNATHY, M. A., 1916, IV, G. H. & S. A. Ry., El Paso.
ABNEY, CARLTON C., 1905, IV, Bank Clerk, Lampasas.
ABNEY, G. R., 1906, IV, Civil Engineer, Bryan.
ABRAHAMS, J. E., 1900, III, Mechanical Engineer, New Braunfels.
*ABRAHAMS, M. L., 1903, III.
ACKER, L., 1902, IV, Civil Engineer, Calvert.
ADAMS, R. E., 1910, IV, Physician, Santa Anna.
ADAMS, A. S., 1895, IV, Engineer, Bryan.
ADAMS, F. L., 1892, I, Farmer and Merchant, Snyder.
ADAMS, LEM, 1908, IV, Draftsman, Oregon Short Line, 424 S. Johnson Avenue, Pocatello, Idaho.
ADAMS, Q., 1912, VII, with Cravens & Cage, Houston.
ADAMS, T. A., 1908, VI, Manager South Texas Cotton Mills, Brenham.
ADICKES, C. F., 1910, IV, Junior U. S. Engineer, Interstate Building, Kansas City, Mo.
ADKISSON, W. T., 1910, IV, City Engineer's Office, Houston.
*ADRIANCE, D., 1886, I. M. S., 1890, Bryan.
ADRIANCE, G. W., 1915, II, University of California, Berkeley.
AGUAYO, N. A., 1904, III.
AHRENBECK, W. T., 1891, III, Minister, Huntsville.
AKERS, M. E., 1902, IV, Rice Farmer, Raywood, Texas.
ALDRIDGE, E. E., 1916, III, Eagle Pass Lumber Co., Brownsville.
ALDWELL, R. E., 1909, V, Cashier, First National Bank, Sonora.
*ALEXANDER, D. E., 1880.
ALEXANDER, J. R., Jr., 1915, III, Navasota.
ALEXANDER, M. R., 1913, IV, Civil Engineer, Pacific Terminal Panama Canal, Balboa, C. Z.
ALEXANDER, R. L., 1902, IV, C. M. & St. P. Ry., 709 Lyon & Healy Bldg., Chicago.
ALLEN, F., 1906, V, Campbellton.
ALLEN, L. E., 1881, III, Manager Allen's City Drug Co., Marlin.
ALLEN, R. R., 1915, I, Lieut., 16th U. S. Cavalry, Ft. Leavenworth, Kan.
ALLEN, W. H., 1888, I, Physician and Surgeon, Marlin.
ALTGELT, E. J., 1892, IV, Real Estate, San Antonio.
ALTGELT, E. S., 1904, IV, Civil Engineer, San Antonio, Box 902.
AMSLER, L. D., 1889, III, Cashier Farmers' National Bank, Hempstead.
AMTHOR, A. W., 1895, IV, Civil Engineer for Brownsville Land and Irrigation Co., Brownsville.
ANDERSON, J. V., 1913, IV, Miner, Oriental Consolidated Mining Co., Abilene.
ANDERSON, R. O., 1913, III, Draftsman, S. P. Railway, El Paso.
ANDERSON, W. D., 1890, I, Manager Ice Works, Waxahachie.
ANDREWS, V., 1884, III, Physician, Floydada.
APPERSON, R. S., 1913, V, Texas P. & L. Co., Dallas.
ARMSTRONG, J. F., 1906, III, Mining, Tampico, Mexico.
ARMSTRONG, M. F., 1882, III, Real Estate and Banking, Mission.
ARNESON, E. P., 1910, IV, Civil Engineer, care City Engineer's Office, San Antonio.
ARNOLD, E. C., 1906, III, Mining Engineer, Flat River, Mo.
ASHFORD, G. W., 1912, V, Assistant Superintendent of Construction for Stuart, James & Cooke, 1320 1-2 Quarrier St., Charleston, W. Va.
ASHTON, JOHN, 1906, I, Veterinarian, British Army, France.
ASTIN, E. H., 1899, III, Banker, Bryan.
ATWELL, B. D., Jr., 1912, V, Electrical Engineer, Westinghouse, Dallas.
ATWELL, C. S., 1912, IV, Surveyor U. S. Eng. Corps, Hutchins.
AUGUST, L. H., 1916, VIII, Calumet Mining Co., Douglas, Ariz.
AYERS, E. L., 1914, II, Chief Inspector Orchards and Nurseries, State Dept. Agr., Austin.
BAADE, J. E., 1911, VII, Plasterer, Waco.
BACCUS, E. D., 1916, V, Western Union Telegraph Co., Dallas.
BACKUS, U. J., 1890, III, Farmer, Eagle Pass.
BAILEY, C. C., 1892, IV, Pres. First National Bank, Bartlett.
BAINES, H., 1906, V, Traffic Dept., S. W. Tel. and Tel. Co., Waco.
BAKER, H. K., 1914, V, Effic. Engineer, 424 East Fifth St., Freemont, Nebr.
BAKER, L. A., 1910, V, Westinghouse Electric Co., 403 Whitney Ave., Wilkinsburg, Pa.
*BAKER, J. J., 1879.
BAKER, SEARCY, 1882, III, Houston.
BALL, B. C., 1914, I, Mansfield.
BALL, W. A., 1912, V, Ranchman, Sweden.
BALLARD, LUKE L., 1905, I.
BANKS, A. L., 1879, B. S., 1892, M. S., 1895, Postmaster, Denton.
BARCLAY, R. L., 1898, III, Contractor, Temple.
BARHAM, G. S., 1902, III, Physician, Nacogdoches.
BARHAM, R. E., 1903, IV, Engineer, Nacogdoches.
BARNES, G. W., 1911, I, Live Stock Specialist, University of Arizona, Tucson.
BARNES, R. M., 1898, III.
BARNES, S. E., 1899, DeLaval Separator Co., 165 Broadway, New York.
BARNITZ, R. B., 1912, VII, Army Officer, San Diego, Cal.
BARRACO, V. A., 1915, I, Proprietor Houston Film and Supply Co., 502-3-4 Settegast Bldg., Houston.
BARWIS, I. G., 1910, VII, County Clerk, Snyder.

BASS, R. O., 1909, V, Electrician, Clifton.
BATTE, T. R., 1902, IV, Superintendent East Coast Oil Co., Apartado 125, Tampico, Mex.; Home address, Bryan.
*BAUER, F., 1904, III.
BAUM, J. A., 1903, IV, Civil Engineer, Georgia.
BAYLOR, R. E., 1913, IV, Instrument Man, Panama Canal, Balboa.
BEALL, V. Z., 1908, IV, Student M. I. of Tech., 263 Newbury, Boston, Mass.
BEAN, B., 1907, IV, C. E., 1909, Civil Engineer, Eng. Draftsman, Sacramento, Cal.
BEASLEY, W. G., 1914, I, Ranch Manager, Gregory.
BEAUREGARD, R. T., 1910, IV, Valuation Dept., 233 San Pedro Ave., San Antonio.
BEAZLEY, C. N., 1913, IV, Grapeland.
BECHERT, F. J., 1911, III, M. E., 1912, 1913, Ch. E., Assistant Examiner, U. S. Patent Office, 1814 Park Road, N. W., Washington, D. C.
BECKER, ADOLPH, 1905, I, Merchant, Brenham.
BECKMANN, A. E., 1915, I, San Antonio.
BEEMAN, T. R., 1903, IV, Locating Engineer, C. M. & St. P. R. R., 617 White Building Seattle, Wash.
BEESLEY, T. J., 1908, III, Manager Rockdale Oil Co., Rockdale.
BEESLEY, W. S., 1892, IV, Civil Engineer, Dallas.
BEILHARZ, W. E., 1903, Structural Engineer, Dept. of Arch., A. & M. College.
BELL, J. E., 1915, IV, Luling.
BELL, T. L., 1915, IV, U. S. Surveyor, Vicksburg, Miss., Home address, Dallas.
BENJAMIN, J. W., 1905, IV, City Engineer, Cuero.
BENTLEY, C. N., 1910, V, Tel. Equipment Engineer, Montreal, Canada,
BERNAY, C. L., 1904, IV, Contractor, 1008 Union National Building, Houston.
BERRINGER, M. S., 1916, Sapulpa Refining Co., Sapulpa, Okla.
BEYER, F. C., 1892, III, Manager Mason Ice and Power Co., Mason.
*BIBERSTEIN, F. R., 1882, III.
BIERING, S. R., 1902, IV, Chief Claim Clerk, G. C. & S. F. Ry., Galveston, 3219 Ave. A.
BIGGERS, C. A., 1914, V, Teacher of Manual Training, Mineral Wells.
BING, B. L., 1910, I, Farmer, Waller.
BIRK, R. A., 1913, IV, Box 23, Iowa Park.
BITTLE, P. B., 1896, I, Superintendent City Schools, Henderson.
BITTLE, T. C., Jr., 1900, IV, Palestine.
BITTLE, A. W., 1894, I, Principal High School, Washington, La.
BIVINS, M., 1907, V, Mattress Manufacturer, Longview.
BLACK, M., Minister, Sterling City.
BLACK, R. S., 1907, IV, Clifton, Arizona.
BLACKALLER, G. A., 1911, I, Stockman, Pearsall.
BLACKMON, G. H., 1910, Waxahachie Nursery Co., 1627 Elm St., Dallas.
BLAKE, H. H., 1907, IV, Engineer for City of Houston, Box 204.
BLAKE, T. W., 1904, I, Gen. Sales Mgr. South Texas Lumber Co., Houston.
*BLAKEMORE, T. E., 1880.
BLAND, L. F., 1899, I, Physician and Surgeon, Dallas, 506 S. W. Life Building.
BLEDSOE, F. F., 1880, Minister, 1907 Brackenridge St., Austin.
BLOCK, J. A., 1912, IV, Houston.
BLOOR, A. W., 1895, I, Attorney, Austin.
BLOUNT, S. L., 1896, I, U. S. Veterinary Inspector, Bureau of Animal Industry, Department of Agriculture, 913 W. Lenda St., Fort Worth.
BOCOCK, J. H., 1894, I, Traveling Salesman, Thaxton, Va.
BOETTCHER, R. B., 1900, III, Cashier Union State Bank, East Bernard.
BOGEL, W. W., 1907, V, Ranchman, Valentine.
BORCHERT, W. C., 1913, IV, Instrument Man, H. & T. C., Ennis.
BORN, THOMAS C., 1905, I, General Contractor, Corpus Christi.
BOURLAND, W. F., 1913, IV, Rodman, S. A. & A. P. Ry. Co., 214 Bowie St., San Antonio.
BOWER, L. J., 1913, I, Entomologist, Salt Lake City, Utah, 506 E. First.
BOWER, W. E., 1908, V, Farmer, Stephenville.
BOWLER, S. E., 1913, V, General Foreman of Construction, Ballston Springs, N. Y.
BOYCE, CHARLES W., 1905, I, Farmer, Runge.
BOYCE, W., Jr., 1907, IV, Roadmaster C. G. W. R. R., Chicago, Ill.
BOYETT, D. C., 1914, I, Bryan.
BOYETT, H., 1912, IV, Engineer Brazos River Levee, Bryan.
BOYKIN, R. E., 1892, III, 1132 Ballard Ave., Dallas.
BOZEMAN, J. R., 1912, V, Electrical Engineer, Unsan, Korea.
BRADLEY, E. I., 1914, I, Dairy and Stock Farmer, Memphis, Tex.
BRANDT, R. L., 1906, III, Draftsman, Box 808, San Antonio.
BRANNIN, C. P., 1909, VI, Campaign Manager for Homestead Loan and Land League of Missouri, Kansas City, Mo.
BRAUMILLER, N. M., 1916, III, Teaching Gainesville High School, Gainesville.
BRAUMILLER, W. E., 1916, I, Cattle Raising and Butcher Business, Texarkana.
*BRAUN, P., 1888, San Antonio.
BRAUNIG, H. E., 1914, V, Hereford Light and Power Co., Hereford.
BRAUNIG, V. H., 1910, V, Asst. Supt. Elect. Dept., San Antonio Gas and Elect. Co., San Antonio.
BRINKMANN, H., 1906, III, 1907, V, Comfort.
*BRITTINGHAM, W. F., Jr., 1890, IV.
BRETSCHNEIDER, W., 1898, IV, Assistant Superintendent M. of W. Dept., T. & N. O. R. R., Houston.
BREWER, H. A., 1899, III, Farmer, R. F. D. No. 3, Dale.
BRICE, H. A., 1910, IV, Contractor, 1301 Ames Trust Building, Birmingham, Ala.
BRIGANCE, GEORGE, 1916, IV, Division of Valuation, Interstate Commerce Commission, Kansas City, Mo.
BRISCOE, W. P., 1911, IV, City Engineering Dept., Houston.
BROGDON, S. T., 1898, III, Minister, Beaumont.
BROOME, W. S., 1914, IV, Memphis.
BROUN, T. R., Jr., 1915, I, Greenwood.
BROWDER, J. H., Jr., 1915, VI, Groesbeck.

BROWN, B. Mc., 1911, III, G. H. & S. A. Ry., El Paso.
BROWN, C., 1911, V, S. W. Tel. and Tel. Co., Dallas.
BROWN, C. G., 1906, V, Instructor, Sibley College, Ithaca, N. Y.
BROWN, H. P., 1911, I, Farmer, Mathis.
BROWN, J. D., 1916, VII, Architect for the Texas Experiment Stations, College Station.
BROWN, J. F., 1913, V, Texas City Terminal Co., Texas City.
BROWN, J. J., 1912, I, Instructor Agriculture, Moore.
BROWN, L. W., 1915, I, Teacher in Arlington Training School, Arlington. Home address, Mathis.
BROWN, R. M., 1901, IV.
BROWN, T. H., 1879, Claim Agent T. & N. O. Ry., T. P. Building, Houston.
BROWN, W. H., 1880, IV, Planter, Navasota.
BRUCE, A. D., 1916, I, Quartermaster's Department, Fort Sam Houston, San Antonio.
BRUCE, E. L., 1894, IV, Orange.
BRUNDRETT, G. T., 1908, V, with Stone & Webster, Dallas.
BRUNDRETT, H., McE., 1914, II, Entomologcal Lab., Reiger Ave., Dallas.
*BRYAN, B. F., 1897, I.
BRYAN, W. I., 1900, II, Chief Engineer, Flour Mills, Celina.
BRYANT, W. T., 1911, VIII, Ch. E., 1913, Graduate Student University of Illinois, Urbana, Ill.
BUCHANAN, T. S., 1909, IV, Farming, Chapel Hill.
BUCKMAN, C. D., 1889, IV, Denison Grocery Co., Denison.
BUCKNER, J. F., 1912, IV, City Engineer, Cleburne.
BUFORD, F. L., 1892, IV, Beaumont.
BUGBEE, J. S., 1915, I, Clarendon.
BUHLER, C. M., 1897, III, Public Accountant, Victoria.
BUHLER, C. W., 1892, IV, Chief of Car Department, S. A. & A. P. Ry., San Antonio.
BUHLER, W. A., 1900, III, Manager Park Garage, Victoria.
BULL, A. C., 1916, I, Austin.
BULLARD, T. O., 1899, III, Machinist T. & N. O., 1507 Congress Ave., Houston.
BURCK, L. B., 1889, IV, Broker, 631 S. Spring St., Los Angeles, Cal.
BURFORD, J. M., 1882, III, Physician and Surgeon, Independence.
BURCHARD, C. L., 1886, III.
BURCHARD, S. H., 1915, IV, Civil Engineer' Gonzales.
BURGES, A. E., 1915, I, Commercial Secretary, Ballinger. Home address, Weatherford.
*BURGOON, C. E., 1895, III, M. E., 1899.
BURKETT, FRED., 1916, IV, 1615 Grand Ave., Fort Worth.
BURLESON, R. C., 1912, IV, 1st Lieutenant, U. S. Army, Fort Meyer, Va.
BURLESON, R. W., 1895, III, Cashier City National Bank, San Saba.
BURLESON, W. H., 1913, V, Texas Power and Light Co., Dallas.
BURMEISTER, C. A., 1908, I, U. S. Dept. of Agriculture, Washington, D. C., 1702 Lamont St.
BURNEY, J. W., 1896, III, Lumberman, Kerrville.
BURNEY, R. L., 1906, IV, General Contractor, 416 Conroy Bldg., San Antonio.
BURNS, A. C., 1907, I, Veterinary Surgeon, Cleburne.
BURNS, D., 1916, I, Stock Farming, Michies.
BURNS, H. E., 1906, IV, Temple, L. & P. Co., Temple.
BURNS, J. C., 1904, I, Professor of Animal Husbandry, College Station.
BURRITT, W. P., 1906, III, Supt. Mines, Ceralvo, Hda. Benevides, Nuevo Leon, Mex,
BURT, F. O., 1910, IV, Gatesville.
BURTON, A., 1913, VII, Graduate Student Columbia University, N. Y. City.
BUTLER, J. V., 1912, IV, Draftsman Santa Fe R. R., Amarillo.
BYARS, G. E., 1910, IV, Supt. Buildings and Grounds, College Station.
CABANISS, W. M., 1912, V, Draftsman Texas Portland Cement Co., Dallas.
CADE, K. C., 1913, IV, Co. Engineer, Lake Charles, La.
CAIN, R. W., 1913, IV, Cotton Factor, Italy.
*CALDWELL, J. C., 1883, III.
CALDWELL, J. R., 1912, III, Student, M. I. T., 6 Blackwood St., Boston, Mass.
CALDWELL, R. E., 1913, I, Corpus Christi.
CALLAWAY, W. H., 1912, IV, Supt. of Constr., Bridges and Dams, Santa Gertrudis Ranch Kingsville.
CAMP, G. D., 1914, IV, Student M. I. T., Boston, Mass. Home address, 310 E. Elmira St. Antonio.
CAMP, T. R., 1916, VII, Texas Light and Power Co., Dallas.
CAMPBELL, A. R., 1915, I, Plano.
CAMPBELL, D., 1879, Stockman, El Paso.
CAMPBELL, P., 1913, V, Marshall P. & L. Co., Marshall.
CAMPBELL, R. W., 1899, III, 416 St. Louis Ave., Fort Worth.
CARDWELL, W. W., 1913, I, Stock Farmer, Lockhart.
CARLETON, H. C., 1916, I, City Milk Inspector, Dallas.
CARLIN, W. J., 1910, III, Draftsman City Engineer's Office, Houston.
CARLISLE, E., 1906, I, Chemist, 56 Suburban Ave., Stamford, Conn.
CARPENTER, M. M., 1902, I, Mining Engineer. 66 Scott St., Tucson, Ariz.
CARRINGTON, H., 1912, Civil Engineer, Bay City.
CARROLL, J. G., 1911, V, Westinghouse E. and M. Co., 405 Biddle Ave., Wilkinsburg, Pa.
CARSON, A. B., 1897, IV, Civil Engineer, Bryan.
CARSON, J. M., Jr., 1886, I, So. Tex. Imp. and Vehicle Co., Houston.
CARSON, J. W., 1886, I, Director Harris County Demonstration Farms, Bellaire.
CARSON, R. C., 1899, III.
CARSON, W. W., Jr., 1915, V, Sherwood.
CARTER, J. D., 1900, IV, Civil Engineer, 317 North Tex. Bldg., Dallas.
CARTER, J. W., Civil Engineer, El Paso.
CARTER, T. H., 1912, V, Celeste.
CARTER, W. T., Jr., 1898, I, Denton.
CARUTHERS, F., 1885, I.
CARUTHERS, R. B., 1912, IV, Instrument Man, S. A. & A. P. Ry., Box 236, Yoakum.
CASEY, A. C., 1916, I, Masonic Home, Fort Worth, Texas.
CASEY, P. D., 1908, VI, S. W. Tel. and Tel. Co., Dallas, 2036 1-2 Commerce St.

CAVEN, G. P., 1897, I.

CAVITT, J. S., 1911, V, Westinghouse E. and M. Co., 413 Pitt St., Wilkinsburg, Pa.

*CAVITT, W. H., III.

CAWTHON, F. W., 1915, IV, care of Chief Engineer C. B. & Q. R. R., Lincoln, Neb.

CELY, H. M., 1910, V, Teacher, Frankston.

*CHAMBERS, M. L., 1879.

CHAMBERS, T. L., 1913, V, Sherman.

CHANEY, L. P., 1912, V, Texas City Trans. Co., Texas City.

CHERRY, T. G., 1915, I, Teacher, Coleman.

CHEWNING, J. W., 1913, I, Chemist, Port Arthur.

CHINSKI, C. C., 1913, IV, Wholesale Grain, Beaumont, 1245 Broadway.

CHRISTEN, J. C., 1912, V, 1837 Lanee Ave., Toledo, Ohio.

CHRISTIAN, B. H., 1910, IV, Lumber and Mine Timbers, Box 893, Warren, Ariz.

CHRISTIAN, J. R., 1911, IV, VIII, 1913, Secretary Industrial Gravel Co., Houston.

CHURCH, MARION S., 1905, I, Attorney, Dallas, 1127 Busch Bldg.

CHURCH, W. G., 1912, V, Tex. P. & L. Co., Waco.

CLARK, H., 1895, I, Physician, Crowell.

CLARK, S. F., 1915, I, Farmer, Hico.

CLARKE, H. S., 1916, III, Packard Motor Car Co., Detroit, Mich.

CLARKSON, D. W. C., 1915, V, Fort Leavenworth, Kan., 19th U. S. Infantry.

CLAYTON, W. D., I, M. S., 1897, 1207 St. Mary St., New Orleans, La.

CLAYTOR, E. McR., with Westinghouse E. and M. Co., 705 Lamar Ave., Wilkinsburg, Pa.

CLEMENT, C. B., 1914, VII, Port Lavaca.

CLEMENT, T. H., Jr., 1900, IV, Port Lavaca.

CLONTS, T. P., 1904, IV, City Engineer, Muskogee, Okla.

COBBS, S. A., 1896, IV.

COBBS, T. D., Jr., 1904, IV, Attorney at Law, 716 Brady Building, San Antonio.

COCHRAN, E. G., 1879, Physician and Surgeon, Pearsall.

COCHRAN, J., 1904, IV, C. E., 1905, General Contractor, 305 First National Bank Building, Houston.

COCK, C. E., 1911, IV, Superintendent Road Construction, Temple.

COGHILL, E. S., 1911, IV, U. S. Gov. Engr. Corps, 3502 McKinney Ave., Dallas.

COHN, S. L., 1897, IV.

COLE, A. T., 1909, V, Lawyer, Clarendon.

COLE, R. J., 1916, II, Bryan.

COLEMAN, F. R., 1916, V, Western Union Telegraph Co., Dallas.

COLEMAN, M. M., 1910, I, Ranchman, Rodger, N. M.

COLEMAN, N. P., 1911, III, El Paso Ice and Refining Co., El Paso.

COLEMAN, W.C., 1915, I, Student Vet. Med. Ohio StateUniv., 192 W. Eighth St., Columbus, Ohio. Home address, Athens.

COLLINS, J. A., 1907, V, Louisiana Creosoting Co., Winnfield, La.

COLLINS, J. C., 1915, I, Channing.

COLLINS, J. W. H., 1913, VI, Farmer, Mexia.

COLLINS, A. B., 1912, V, Inspecting Eng., Elmhurst, N. Y.

COLLINS, W. A., 1916, I, Groveton.

CONNELLEE, E. T., 1913, I, Eastland.

CONNER, A. B., 1904, I, Agronomist for Texas Experiment Station, College Station.

CONNER, J. A., 1916, I, Teaching, Rylie, Dallas County.

CONNER, T. P., 1912, I, Red Oak.

COOK, E. A., 1892, III, Postoffice Dept., U. S. Govt., Cleburne.

COPELAND, A. B., 1915, II, Teacher Clebarro College, Cleburne, Home address, Stephenville.

CORLETT, R. H., 1911, IV, Civil Engineer for Producers' Oil Co., Wichita Falls.

CORNELL, A. L., 1908, IV, Auditor M. K. & T. Ry. Co., Denison.

CORNETTE, G. J., 1916, IV, Government Engineer, Box 404, Vicksburg, Miss.

COTTINGHAM, I. A., 1886, III, Assistant General Manager H. & T. C. Ry., 2811 Fannin St., Houston.

COTTINGHAM, W. P., 1892, IV, Merchant, Houston.

*COTTON, H., 1897, IV.

COUCH, E., 1897, III, Engineer Concrete Constr., Klein Bros. Co., Dallas.

COULTER, H. T., 1895, II, Physician, Rockdale.

COULTER, W. J., 1895, III, Merchant, Bryan.

*COULTER, R. E., 1901, III.

COURTNEY, O. K., 1914, I, Student University of Wisconsin, Madison, Wisconsin.

COUSINS, R. W., 1899, III, Electrical Eng. Ind. Steel Co., Gary, Ind.

COWART, I. E., 1913, I, Assistant Professor of Horticulture, College Station.

COX, W. D. S., 1892, IV.

COX, H. T., 1912, V, Power and Light Co., Hereford.

COX, R. W., 1913, I, Post Graduate Iowa State College, Ames, Iowa.

COZART, R. B., 1911, III, Asst. Superintendent Lufkin Foundry and Iron Works, Lufkin.

CRAVENS, J. R., 1882, III, General Agent Fire Insurance, Houston.

CRAWFORD, V. W., 1916, I, Luce and Moseley, Hereford Cattle Breeders, Shelbyville, Ky.

CROCKER, W. J., 1916, V, Mississippi River Power Co., Keokuk, Iowa.

*CROCKETT, C. M., 1910, IV.

CROCKETT, J. B., 1908, IV, C. E., 1909, Assistant County Engineer, McKinney.

CROUCH, J. H., 1910, V, Salesman, Houston Heights, Texas, 1823 Columbus, Tex.

CROW, W. E., 1898, II, Physician, 318 Wilson Building, Dallas.

CROWN, P. T., 1915, IX, Architect, 321 N. Eleventh St., Waco.

CRUM, J. B., 1911, VII, Ford Motor Co., Dallas.

CRUSE, JOHN T., 1905, I, Farmer and Teacher, Calhoun.

CULBERTSON, J. L., 1913, I, Farmer, Hamlin.

CULVER, DAN, 1908, III, Salesman, Lampasas.

CUNNINGHAM, F. H., 1910, V, Local Manager Otis El. Co., El Paso.

CUNNINGHAM, A., 1879, Railway Postal Clerk, Palacios.

CUNNINGHAM, P. E., 1907, IV, Junior Engineer Mississippi River Commission, Box 424, Vicksburg, Miss.

CURNETTE, J. V., 1916, IV, Government Engineer, Box 404, Vicksburg, Miss.

CURTIN, W. H., 1912, III, City Eng. Dept., Houston.

CUSHING, D., 1891, III, Yorktown Consulting Engineer, Yorktown.
CUSHING, E. B., 1880, III, C. E., 1899, Chief Engineer Construction Sunset-Central Lines, 915 Southern Pacific Building, Houston.
DAHME, A. F., 1904, IV, Engineer, Yorktown.
DALE, I., 1908, IV, Engineer T. & P. Ry. Co., Dallas.
DALE, J., 1908, III, Automobile Dealer, Vernon.
DALLMEYER, C. D., 1911, VI, with Swift Mfg. Co., Columbus, Ga.
DARST, T. B., 1911, I. Stock Raising and Ginner, Richmond.
DASHIELL, W. R., 1891, IV, Physician, Mission, Col.
DAUGHERTY, M. M., 1916, I, Assistant County Demonstration Agent, Austin.
DAVENPORT, H. S., II, Agriculturist, 2 Crawford St., Palestine.
DAVIS, C. J., 1915, I, Corsicana.
DAVIS, DEAN, 1915, V, Bush Electric Co., Galveston. Home address, Dawson.
DAVIS, D. O., 1911, I, Farming, McKinney.
DAVIS, J. M., 1903, IV, Banker, Forney.
DAVIS, J. N., 1885, III, Farming and Stock Raising, Hico.
DAVIS, J. N., Jr., 1913, IV, Transitman, Balboa, C. Z.
DAVIS, T. C., 1914, IV, Civil Engineer, G. C. & S. F. Ry., Galveston.
DAVIS, S. F., 1915, I, Teacher of Agr., John Tarlton College, Stephenville.
DAVIS, W. K., 1916, V, Overland Automobile Salesman, Bryan.
DAWSON, N. A., 1884, Lawyer, 801 Gunter Bldg., San Antonio.
DAY, T. R., 1902, I, Agricultural Commissioner, Leopoldina Ry., Novo Friburgo, Estado do Rio, Brazil.
DAZEY, W. L., 1894, IV, Dentist, Hillsboro.
DEAN, J. S., 1906, VII, Architect, State Architect's Office, Sacramento, Cal.
DELLIS, J. L., 1912, IV, Draftsman Pacific Electric Ry. Co., Los Angeles, Cal.
DE LONG, R., 1915, III, Mexia.
DENNIS, L. C., 1916, II, Graduate Student, University of Missouri, Columbia, Mo.
DENTON, V. C., 1915, IV, Civil Engineer, Whitewright.
DEVINE, P. S., 1912, IV, Laredo.
DIBRELL, Z. H., 1910, V, Coleman.
DICKERSON, A. F., 1910, V, Gen. Elec. Co., Illuminating Engr. Lab., Schenectady, N. Y.
DICKERSON, W. E., 1911, IV, General Eng. Practice, Cuero.
*DICKIE, B. H., 1915, V.
DICKIE, ALEXANDER, 1916, V, General Electric Co., Pittsfield, Mass.
DICKSON, J. L., 1912, IV, Asst. Eng. Freeport T. Wn. Co., Velasco.
DICKSON, R. E., 1912, I, Superintendent Experiment Station, Spur.
DIETERT, R. H., 1888, III.
DINTER, H. A., 1911, V, Electrician Central Texas Power and Trans. Co., Hico.
DODSON, A. E., 1915, I, Petersburg.
DODSON, C. P., 1911, V, Manager Light Plant, Sanger.
DONALDSON, C. B., 1893, III, Farmer, Kyle.
DONOHO, W. T., 1913, IV, Civil Service Commission, Kansas City, Mo.
DORSEY, W. L., 1911, V, Head Eng. Dept., Peacock's Military College, San Antonio.
DOWELL, H. B., 1913, I, Collin County National Bank, McKinney.
*DOWNS, J. R ., 1879.
DOWNS, P. L., 1879, Vice-President First National Bank, Temple.
DRIESS, E., Jr., 1913, VI, 401 E. Guenther St., San Antonio.
DRISDALE, W. E., 1889, II, Physician and Surgeon for Victor-Amer. Fuel Co., Gray Creek, Col.
DROSS, P. H., 1902, III, General Manager F. Marty Foundry Co., Meridian, Miss.
DUDLEY, F. E., 1885, II, Real Estate and Insurance, 7426 Sunset Boulevard, Los Angeles, Cal.
*DUGAN, G. H., 1881.
DUGGAN, A. P., 1895, IV, Manager Littlefield Lands, Littlefield.
DUNN, R. B., 1904, III, Merchant, Benchley.
DUNNING, G. R., 1915, VIII, Chemist for Sloss-Sheffield Steel & Iron Co., Brookfield, Ala.
DURST, BRUNO L., 1905, IV, Sixth St., Port Arthur.
DWYER, T. J., 1912, IV, Texas School of Mines, El Paso.
DWYER, W. F., 1899, I.
EAGLESTON, E. G., 1913, I, Asst. Cashier First National Bank, Smithville.
EASLEY, C. M., 1916, VII, Texas National Guard, Corpus Christi.
EGAN, J. T., 1913, I, County Agent, Seymour.
EDDINS, R. R., 1909, V, Electrician, Marlin.
EDSALL, A. B., 1907, I, Farmer, Spring Creek.
EDWARDS, J. F., 1883, III.
EBERSPACHER, F., 1906, IV, Retail Stationer, 1020 So. 16th St., Birmingham, Ala.
EBERSPACHER, G., 1896, III, Machinist S. P. Ry., Houston.
EBERSPACHER, R., 1901, III, Electrician Sunset-Central Lines, 1620 Gano St., Houston.
EHLERS, P., 1907, V, La Grange.
EHLERS, V. M., 1905, State Sanitary Engineer, Austin.
EHLERS, W. J., 1910, VII, Architect, Wentz.
EHLERT, J. F., 1916, I, 32nd Infantry, U. S. Army, Fort Leavenworth, Kansas.
EHLINGER, G. E., 1912, I, Sugarland.
EHLINGER, L., 1906, IV, Draftsman General Land Office, Austin.
EHLINGER, R. B., 1913, I, Deputy State Feed Inspector, College Station.
EHRHARDT, E. J., 1910, IV, U. S. Junior Engineer, Crockett.
EILAND, E. R., 1915, I, Land Inspector, U. S. Bond and Mortgage Co., Greenville.
*ELDRIDGE, H. M., 1897, IV.
ELLIOTT, J. E., 1910, VII, Texas Co., Houston.
ELLIOTT, F. G., 1906, VI, with Bush & Witherspoon, Cotton Brokers, Waco.
ELLIS, H. E., 1910, V, Lieut. C. A. C., Fort Baker, Cal.
ELLIS, H. F., 1915, I, First Asst. Cashier F. and M. Bank, Abbott.
ELLIS, B. V., 1892, I, Physician, 1515 Boulevard St., Houston.
ELLIS, FORT O., 1894, IV, Sheriff and Tax Collector, Harrisonburg, La.
ELLIS, O. L., 1908, V., S. W. Tel. and Tel. Co., 2015 Bennett Ave., Dallas.
ELROD, H. E., 1901, III, Consulting Engineer, 505 Interurban Bldg., Dallas.
ENGLISH, M. G., 1909, IV, Civil Engineer, Stone and Webster, El Paso.

EPPLER, H. G., 1912, V, Cisco.
EPPRIGHT, F. G., 1902, III, Donna.
EPSTEIN, S. G., 1907, IV, Mgr. Electric Express, Beaumont.
ERHARD, E. C., 1903, III, Hardware Merchant, Bastrop.
ESCHENBURG, A. C., 1916, I, Floresville.
EUDALY, E. R., 1910, I, Stockman, Fairy.
EVANS, C. D., 1899, IV, Plantation Mgr., Greenwood, La.
EVANS, C. M., 1908, I, Superintendent Agricultural Extension Dept., College Station.
EVERETT, G. D., 1915, II, Supt. Exp. Grounds, Texas Seed and Floral Co., Dallas.
EVERSBURG, E. A., 1913, I, Asst. Manager Armour & Co., Brenham.
EVERSBURG, O. L., 1910, I, with National Biscuit Co., Houston.
FABER, B. H., 1915, IV, Rodman and Chainman Interstate Commerce Commission, Kansas City, Mo.
FAIRBAIRN, G. C., 1912, V, Port Arthur Light and Power Co., Port Arthur.
FARMER, A. G., 1895, III, Stockman, Junction.
FARMER, J. S., 1912, I, Stock Farmer, Route 7, Box 25, San Antonio.
FARTHING, W. E., 1914, IV, Valley View.
FAUST, H., 1900, III. First National Bank, New Braunfels.
FAUST, W., 1897, IV, Cashier First National Bank, New Braunfels.
FEARHAKE, J. D., 1889, IV, Attorney, 60 Broadway, New York.
FEHRENKAMP, E. B., 1901, IV, Bookkeeper, Kenedy.
FERGUSON, A. M., 1894, II, M. S., 1896, Pres. and Gen. Mgr. Ferguson Seed Farms, and Prop. Ferguson Publishing Co., Sherman.
*FIELD, H. Y., 1891, I.
FIGH, J. R., 1912, I, Stock Farmer, Canyon.
FINNEY, C. B. 1896, IV, Mining Engineer, Apartado 173, Oax, Mexico.
FISHER, J. K. G., 1914, I, Asst. Hog Buyer, 1612 Belmont Ave., Fort Worth.
FITZGERALD, A. H., 1895, I, Druggist, Gonzales.
FITZGERALD, L., 1900, III, Vice-President G. H. L. & W. Co., Gary, Ind.
FITZHUGH, E. E., 1880, Real Estate, Waco.
FITZPATRICK, B., 1913, IV, Columbus.
FLEMING, C. H., 1908, VI, Wholesale Groceries, Cisco.
FLOYD, J. F., 1892, III, Lumber Dealer, Texarkana.
FLYNT, H. C., 1890, I, Real Estate, 810 Gunter Bldg., San Antonio.
FORD, F. D., 1911, IV, Cordell, Okla.
FORDTRAN, F. L., 1887, I, Physician, Kerrville.
FORSGARD, C. H., 1911, V, Childress.
FORSGARD, OSCAR L., 1905, IV, Civil Engineer, 3618 San Jacinto St., Houston.
FORSYTH, J. M., 1912, III, 1913, M. E., with Allis-Chalmers, West Allis, Wis.
FORSYTH, W. R., 1916, III, Allis-Chalmers Co., Milwaukee, Wis.
FORT, F. W., 1879, Wholesale Grain, Provident Bldg., Waco.
FOSTER, C. J., 1916, II, American Rapid Transit Co., Union Station Bldg., Little Rock, Ark.
FOUNTAIN, E. J., Jr., 1913, VII, Student Harvard Law School, 64 Oxford St., Cambridge, Mass., Home address, Bryan.
*FOUNTAIN, S. J., 1901, IV.
FOUNTAIN, T. D., 1904, IV, Merchant, Dalhart.
FOUNTAIN, T. L., 1901, IV, Engineer of Sewerage City Engineer's Office, Dallas.
FOURAKER, L. L., 1914, V, 705 Lamar Ave., Wilkinsburg, Pa.
FOURAKER, R. S., 1914, V, 705 Lamar Ave., Wilkinsburg, Pa.
FOUTREL, G. F., 1898, III, Foreman Warehouse, 225 S. Presa St., San Antonio.
FOWLER, E. G. R., 1894, IV, Palestine.
FOY, H. F., Jr., 1908, V, Field Engineer Interstate Commerce Commission, 601 Interstate Bldg., Kansas City, Mo.
FOY, V. H., 1902, III, S. W. Tel. and Tel. Co., Pine Bluff, Ark.
FRANCIS, A. J., 1912, I, College Station.
FRANCIS, W. B., 1915, I, Student Cornell University, 105 Harvard Place, Ithaca, N. Y. Home address, College Station.
FRANCISCO, E. O., 1915, IV, C. E. Dept., College Station.
FRAZIER, B., 1911, I, Electrician, 617 South Third St., Waco.
FREEMAN, J. H., 1887, III, Insurance Agent, Austin.
FRENCH, W. A., 1913, IV, Grocer, Kaufman.
FRIES, JOHN, 1912, IV, City Engineer's Office, 139 Cedar St., San Antonio.
FUESS, C. A., 1916, VII, Graduate Student, Mass., Institute of Technology, Boston.
*FULLER, T. A., 1879.
FURNEAUX, W. H., 1909, I, 3917 Euclid Ave., Dallas.
GAMMILL, H. H., 1915, I, Bryan.
GARBADE, W. T., 1901, Adjunct Professor of University of Texas, Medical Dept., Galveston.
GARNETT, R. M., 1902, IV, St. L. B. & M. Ry. Co., Brownsville.
GARRETT, M. T., 1916, I, Oil Operator, Goose Creek.
GARZA, C. M., 1905, IV, Brownsville.
GEREN, P. M., 1912, VII, Architect, Austin.
GIBBENS, E., 1914, I, Alabama Exp. Station, Allenville, Ala.
GIESECKE, A. C., 1909, IV, Utah P. & L. Co., Salt Lake City, Utah.
GIESECKE, B. E., 1911, VII, Architect, Austin.
GIESECKE, F. E., 1886, III, M. E., 1890, Professor of Architecture, University of Texas Austin.
GIESECKE, G., 1884, III, Merchant Miller, Station A, Box 6, San Antonio.
GIESECKE, W. E., 1892, III, 18 West 25th St., New York City, N. Y.
GILBERT, C. L., 1911, V., U. S. Army, Fort Adams, R. I. Home address, Smithville.
GILBERT, J., 1894, I, Physician, Austin.
GILBERT, W. A., 1907, I, Farmer, Mabank.
GILBERT, W. R., 1909, I, Merchant, Route 1, Austin.
GILLESPIE, S. E., 1903, III, Draftsman, The Murray Co., Dallas.
GILLESPIE, W. S., 1915, IV, Draftsman A. T. & S. F. R. R., 605 W. Sixth St., Topeka, Kan.
GILLETTE, P. C., 1913, IV, Civil Engineer, Panama Canal, Balboa, C. Z.
GILMORE, H. C., 1896, III.
GIRADEAU, E. R., Jr., 1915, II, Galveston.

GIST, BYRON, 1910, I, Stock Farming, Littlefield.
GIST, W. B., 1913, IV, Panama Canal, Paraiso, C. Z.
GLASS, R. H., 1904, III, Dentist, Hearne.
GLASS, WILL V., 1905, I, Druggist, Lufkin.
GLEASON, B., 1906, V, Farming, Fairy.
GLEASON, H., 1903, IV, Manager Hico Light and Power Co., Hico.
GLOVER, W. F. H., 1898, I, Planter, R. F. D. 1, Box 14, Charleston, S. C.
GOLDBERG, I. L., 1896, II, Merchant, Jefferson.
GONZALES, J. de la M., 1913, IV.
GOODWIN, J. C., 1914, I, Chief Clerk State Plant Board of Florida, Gainesville, Fla.
GOODWIN, W. M., 1912, V, Western Electric Co., Cicero, Ill.
GRADY, M. L., 1909, IV.
GRAHAM, C. E., 1916, II, Assistant State Entomologist, Austin.
GRANAU, H. F., 1907, IV, Merchant, Belleville.
*GRAVES, C. S., 1882, III.
GRAVES, D. R., 1903, III, T. & P. Ry. Co., Fort Worth.
GRAY, J. L., 1884, III, Land Dealer, Boulder, Col.
*GRAY, O. H., 1911, V.
GREEN, C. E., 1912, V, General Electric Co., Schenectady, N. Y.
GREEN, ROY, 1914, I, Farmer, Floydada.
*GREEN, R. B., 1884, III.
GREENE, O. W., 1915, I, Science Teacher High School, Gatesville. Home address, Comanche.
*GREENWOOD, F. J., 1898, IV.
GRIESENBECK, C. H., 1912, VII, Architect, 1101 S. W. Life Bldg., Dallas.
GRIFFITHS, T. W., Jr., 1900, III, with Griffiths & Co., Lumber Dealers, Dallas.
GRISCOM, R. J., 1913, IV, Professor of Mathematics, B. B. A., Bryan.
GROGINSKI, P., 1914, V, Texas P. & L. Co., Hillsboro.
GROTE, F. H., 1911, I, County Dem. Agent, Fredericksburg.
GRUENE, E., 1887, III, Piano Dealer, New Braunfels.
GRUPE, G., 1892, III, Superintendent Water Dept., City of Cleburne.
*GUGENHEIM, L. Z., Jr., 1906, V, E. E., 1907.
GUNN, C. H., 1916, I, Teaching, Anderson High School, Anderson.
GURLEY, D. R., Jr., 1892, Farmer, Waco.
HACKNEY, J. G., 1906, III, Merchant, Altus, Okla.
HAGAMAN, L. H., 1916, IV, I. & G. N. Ry. Co., Palestine.
HAILE, C. R., 1912, IV, San Antonio.
HADEN, J. H., 1879, Farmer and Stockman, R. F. D. No. 2, Barry.
HALL, G. G., 1913, I, 1914 Travis St., Houston.
HALL, R. A., 1916, I, Assistant County Demonstration Agent, Dallas.
HALLER, C. F., 1915, I, Farmer, Bloomington.
HALTOM, G. T., 1906, V, Garage Business, Moulton.
HANER, E., 1904, IV, St. L. I. M. & S. Ry., Monroe, La.
HANNA, HOWARD E., 1905, I, Lumber and Building Material, Dallas.
HANSCHKE, R., Jr., 1890, III.
HANSON, W. K., 1916, II, Bank Clerk, Austin.
*HARE, H. C., 1887, III.
HARE, S. C., 1882, III, Lawyer, 566 S. Travis St., Sherman.
HARRINGTON, C. B., 1902, I.
HARRISON, C. C., 1899, II, National Hotel, Washington, D. C.
HARRISON, E. W., Jr., 1913, I, Farmer, Greenville.
HARRISON, J. C., 1914, III, Hico Ice and Cold Storage Co., Hico.
HARRISON, J. G., 1902, III, Architect, Wilson Bldg., Dallas.
*HARRISON, W. A., 1898, II.
HARRIS, D. B., 1909, IV, Bank Clerk S. Texas Com. Natl. Bank, Houston.
HAUCK, CHARLES F., 1905, III, 2045 Hill St., Boulder, Colo.
HAUSSER, CHARLES, 1916, I, Eagle Pass.
HAWES, ROSCOE, 1916, IV, Highway Engineer, Taylor.
HAWKINS, A. R., 1916, VII, City Engineering Department, Dallas.
HAWKINS, J. W., 1893, I, General Land Office, Austin.
HAYNES, S. B., 1916, IX, Beaumont.
HEIDELBERG, H. A., 1903, III.
HEFNER, C. B., 1916. V, General Electric Co., Schenectady, N. Y.
HEFNER, W. J., 1913, V, with General Electric Co., Schenectady, N. Y.
HELDENFELS, C. A., 1903, I, Lumber Dealer and Architect, Beeville.
HELDENFELS, F. W., 1909, VII, Lumber Dealer and Architect, Beeville.
HELDENFELS, G. C., 1916, I, Stock Farming, Beeville.
HELLER, J. H., 1913, I, Manual Training and Military Science, Masonic School, Fort Worth.
HELLER, W. L., 1908, I, Wholesale Florist, R. F. D. No. 1, Alvin.
HELM, D. L., 1916, I, Stock Farming, Clifton.
HEMPHILL, G. H., 1912, V, Otis Elevator Co., Dallas.
HENDERSON, C. M., 1911, I, Broker, Linz Bldg., Dallas.
HENDERSON, H. W., 1891, I.
HENRY, J. L., 1916, I, Stock Farming, Lancaster.
HENSEL, F., Jr., 1907, I, Associate Professor of Horticulture, College Station.
*HEREFORD, J. B., 1887, III.
HERNSTADT, S. J., 1890, IV, Member New York Cotton Exchange, 60 Broadway, N. Y.
HERRINGTON, J. A., 1916, M. E., Assistant in Mechanical Engineering, College Station.
HERRINGTON, J. J., Jr., 1914, III, Asst. Supt. Buckeye Cotton Oil Co., Selma, Ala.
HIGGINS, W. S., 1907, IV, Roadmaster G. H. & S. A. Ry., Victoria.
HILDEBRANDT, A. M., 1896, II, M. S., 1898, Minister, Sewanee, Tenn.
HILL, JOHN E., Jr., 1904, III, 1905, V, E. E., 1907, Bell Tel. Co., Waco.
HILL, J. R., 1913, IV, Inspector Road Construction, Terrell.
HILL, M. E., 1916, I, Stock Farming, Eastland.
HILL, M. J., 1907, V.
HILL, S. S., 1914, V, Student Engineer, 209 Woodlawn Ave., Pittsfield, Mass.
HOBBS, L. S., 1916, III, Kansas State Agricultutal College, Manhattan, Kansas.
HOEFLE, K. F., 1912, IV, Amalgamator, Unsan, Chosen, Japan.

HOEPFNER, F. W., 1914, I, Hog Ranch, Dairy and Beet Feeding, Taft.
HOFFER, T. B., 1904, IV, Division Engineer Producers Oil Co., Wichita Falls.
HOFFMAN, F. C., 1888, III, Jeweler, New Braunfels.
HOFMAN, R. W., 1906, IV, Merchant, Mason.
HOGUE, E. N., 1915, V, Apprentice, W. E. & Mfg. Co., 708 Lamar Ave., Wilkinsburg, Pa.
HOHN, CAESAR, 1912, I, M. S., 1914, Manager Pease Ranch, Corpus Christi.
HOLCOMB, R. M., 1902, Clerk Auditor's Office, P. E. Ry. Lines, Los Angeles, Cal.
HOLLAND, C. J., 1913, VIII, Brownwood.
HOLLINGSHEAD, F. A., 1916, VIII, Power and Light Co., Arkadelphia, Ark.
HOLLOWAY, L. E., 1915, I, Dallas.
HOLLOWAY, T. E., 1908, I, U. S. Department of Agriculture, New Orleans, La.
HOLMAN, J. R., 1895, IV, Chief Engineer Oregon & Washington R. R., Seattle, Wash.
HOLZMAN, F. R., 1902, I.
HOLZMAN, WALTER R., 1905, I, Veterinarian, Natchez, Miss.
HOMANN, A. C., 1898, III, Banker, Ballinger.
HOMANN, F. A., 1915, III, Heating Draftsman, 606 Preston Ave., Houston.
HOMEYER, C. W., Jr., 1908, IV, Robstown.
HOOKER, R. M., 1910, I, Farming, Tyler.
HOOPER, J. J., 1901, I, Professor of Animal Husbandry, Kentucky State College, Lexington, Ky.
HOPKINS, S. H., 1890, I, Attorney, Gonzales.
HORN, T. L., 1899, III, Machinist I. & G. N. Shops, Palestine.
HORTON, C. K., 1909, IV, Civil Engineer for Horton & Horton, Houston.
HOUGH, S. A., 1885, III, County and District Clerk, Rock Springs.
HOUSTON, F. N., 1894, IV, Sou. Pac. Ry. Co., Lake Charles, La.
HOWELL, J. W., 1894, I, President and Manager Bryan Cotton Oil Co., Bryan.
HOWELL, R. W., 1896, I, Cashier First National Bank, Bryan.
HOYO, G. A., 1906, I, Superintendent and Special Disbursing Agent Int. Dept., Otoe, Okla.
HUDGINS, F. D., 1897, IV, General Superintendent Jas. C. Travilla Co., Fort Worth.
HUDGINS, L. A., 1913, VIII, Chemist, 808 1-2 Main Street, Dallas.
HUDSPETH, C. C., 1915, V, Westinghouse Elec. Co., Wilkinsburg, Pa.
HUDSON, GAY, 1916, I, Teaching, Celeste.
HULL, B. E., 1904, IV, Chief Engineer Refining Department Texas Co., Houston.
HUNT, N. H., 1912, V, Chapman Engineering Co., Texas City.
HURDLE, E. F., 1915, IV, Draftsman, Continental Oil and Gas Co., Box 578, Bartlesville, Okla.
HUTCHINSON, E. W., 1889, IV, Secretary-Treasurer Moore-Cortes Canal Co., Houston.
HUTCHINSON, O. D., 1893, I, Macatee Hotel, Houston.
HUTCHINSON, W. F., 1897, IV, Bank Cashier, Winter Haven, Fla.
HUTH, T. G., 1912, III, Proprietor Huth Seed Co., San Antonio.
HUTSON, A. C., 1900, IV, Engineer Natl. Bd. Fire Underwriters, 76 William St., New York City.
HUTSON, H. L., 1896, III, Secretary A. M. Lockett & Co., Ltd., 721 Lowerline St., New Orleans, La.
HUTSON, W. F., 1895, IV, Assistant Supt. H. E. & W. T., Houston.
HUTSON, M. B., 1909, V, Salesman Electric Appliance Co., 7321 Panola St., New Orleans, La.
HYNDS, H. G., 1910, V, Texas City Ter. Co., Texas City.
INGRAM, H. L., 1910, V, Supt. Sub-stations, Texas Traction and Southern Traction Cos., Dallas.
IRBY, A. H., 1914, I, Asst. Veterinarian to Experiment Station, College Station.
ISBELL, J. M., 1903, IV, Civil Engineer, G. C. & S. F. Ry., Galveston.
ITZ, F., 1911, IV, on Construction of Concrete Bridges, Wilkleman, Ariz.
*JACK, D. M., 1879.
JACKSON, J. W., 1913, I, Superintendent Experiment Station, Pecos.
JACOT, H., 1902, Merchant Mining Machinery, Apartado 414, Mexico City.
JAHN, R. S., 1910, IV, G. H. & S. A. Ry., El Paso.
*JAHN, F. C., 1894, II.
JAMES, M. H., Jr., 1913, I, Citrus Canker Eradication Work, Houston. Home address, Bryan.
JAMES, O. J., 1914, I, Braden Copper Co., Rancuaga, Chile.
JAPHET, G., 1894, III, Wholesale Fruit and Produce, 917 Commerce St., Houston.
JAPHET, W. E., 1904, IV, Civil Engineer Producers Oil Co., Houston.
JARRETT, E. L., 1916, V, Western Electric Co., Dallas.
JARVIS, J. R., 1915, VIII, Tex. P. & L. Co., Dallas.
JENNINGS, A. L., 1914, III, Jennings Hardware Co., Kosse.
JENNINGS, J. W., 1911, I, Asst. Cashier Kirby Lumber Co., Bessmay.
JENSON, W. M., 1912, I, Ice Cream Mfg. Co., Durant, Okla.
JOBSON, H. H., 1908, I, Cotton Expert for Chinese Government, Peking, China.
JOBSON, T. S., 1903, III, Signal Supervisor G. H. & S. A. Ry., Box 553, Del Rio.
JOHN, J. R., 1910, IV, Draftsman, City Engineer's Office, Dallas.
JOHNSON, A. D., 1916, I, Assistant Experiment Station Plant Pathologist, College Station.
JOHNSON, M. L., 1912, V, Eng. of Con. A. L. & W. Co., Amarillo.
JOHNSON, T. L., 1912, I, Stockman, West Plains, Mo.
JOHNSTON, L. M., 1913, III, M. E., 1914, Gulf Refining Co., Port Arthur.
JOHNSTON, T. J., 1911, V, Westinghouse E. & M. Co., 500 Kelly St., Wilkinsburg, Pa.
JONAS, E. C., 1894, IV, Draftsman Resident Engineer's Office, G. H. & S. A. Ry., 1002 Avenue D, San Antonio.
JONAS, H. F., 1888, IV, Bridge Engineer Sunset Lines, Houston.
JONES, H. P., 1913, IV, Contracting Engineer, Kaufman.
JONES, C. E., 1908, I, Bookkeeper First National Bank, Bryan.
JONES, G. M., 1912, I, 2011 Canal St., New Orleans, La.
JONES, L. P., 1916, I, Temple.
JONES, L. R., 1908, IV, Engineer Gulf Refining Co., Port Arthur.
*JONES, W. F., 1889, IV.
JONES, W. T., 1914, V, Commonwealth Edison Co., Chicago, Ill.
JOPLIN, J. F., 1913, I, Stock Farmer, Duster.
JORDAN, G. F., 1914, I, Feeding and Breeding Station, College Station
JORDAN, H. P., 1895, IV, Attorney at Law, Waco.

JOSEY, N. L., 1888, I.
JOSSERAND, L. P., 1913, VII, Draftsman for Finkle & Durant, 112 Park View, Detroit, Mich.
JOUINE, G. P. F., 1907, IV, French Army.
KAHN, M. S., 1900, II, Physician and Surgeon, Hallettsville.
KEASLER, T. F., 1916, I, Buying Oil Leases, Hugh Springs.
KELL, E., 1894, III, Mechanical Engineer, 2221 Columbus St., New Orleans, La.
KELLER, J. J., 1913, V, with Western Elec. Co., 3926 Bowser Ave., Dallas.
KELLY, C. P., 1913, I, Rose Hill Dairy Farm, Selma, Ala.
KELLY, D. C., 1916, VIII, Consolidated Oil Refining Co., East St. Louis, Ill.
KELLY, H. J., 1911, IV, U. S. Engineers, Port Arthur.
KENDRICK, R. T., 1906, I, Ranchman, Hart.
KENEDY, O., 1883, III, Attorney at Law, Mexia.
KENNEDY, B. R., 1913, I, Dairy Manager, Falfurrias.
KENNEDY, E. J., 1912, I, Houston.
KERR, E. W., 1896, III, M. E., 1899, Mgr. Sugar Mill, Havana, Cuba.
KERR, J. G., 1898, I, Veterinarian, 135 Cypress St., Beaumont.
KIDD, J. W., E. E., 1909, Professor State School of Mines, El Paso.
KILLOUGH, D. T., 1914, I, Supt. Temple Exp. Station, Temple.
KILLOUGH, H. B., 1916, I, Extension Department, College Station.
KINCAID, E. B., 1911, I, Sabinal.
KINCHELOE, J. M., 1915, II, Student University of Virginia, Charlottesville, Va. Home address, Hubbard.
KINNARD, A. W., 1915, I, Coon's Cypress Silo Co., Patterson, La.
KINSLOE, R. H., 1903, Magnolia Pet. Co., Beaumont.
KIRKPATRICK, L. R., 1906, III, Farmer, McKinney.
KIRSCHNER, I., 1901, IV, Resident Engineer W. F. & N. W. Ry., Leedy, Okla.
KLEINSMITH, M. L., 1901, IV, Standard Oil Co., Peking, China.
KLEUSER, M. C., 1910, VII, Draftsman, with Hubbell & Green, Dallas.
KLOSS, E. L., 1902, III, Machinist I. & G. N. Shops, San Antonio.
KLOSS, O. H., 1907, IV, Asst. Cashier First National Bank, Bellville.
KNOLLE, A. P., 1888, IV, Physician, Ellinger.
KNOLLE, B. E., 1894, III, Physician, Industry.
KNOLLE, E. R., 1887, III, Physician, Brenham.
KNOLLE, MILES, 1916, I, Stock Farming, Industry.
KNOLLE, O. J., 1897, I, Physician, Industry.
KNOLLE, W. H., 1888, IV, Physician and Surgeon, 3941 Canal St., New Orleans, La.
KNOX, G. P., 1914, IX, Southern Structural Steel Co., San Antonio.
KOINM, C. H., 1913, Engineer for Doherty Operating Co., 60 Wall St., N. Y.
KOONS, J. V., 1911, III, Civil Engineer, El Campo.
KOPKE, L. J., 1880, IV, Civil Engineer and Real Estate, Beaumont.
KOTZBUE, M. H., 1914, III, Chief Engineer Tulsa Boiler and Machinery Co., Tulsa,Okla.
KOWALSKI, B., 1906, IV, Brownsville.
KRAUSKOPH, E. M., 1911, IV, Fredericksburg.
KREUGER, C. C., 1912, IV, Salesman S. A. M. and S. Co., San Antonio.
KRAEGE, A. C. A., 1913, V, with Gen. Elec. Co., Schenectady, N. Y.
KRISTEK, G. H., 1916, V, Westinghouse Electric Co., 705 Lamar Ave., Wilkinsburg, Pa.
KROULIK, HUGO J., 1905.
KUEHNE, J. F., 1889, II, Manufacturing and Commission Agent, Box 5104, Mexico City.
KYLE, A. J., 1897, I, Stockman, Pecos.
KYLE, E. J., 1899. II, Professor of Horticulture and Dean of School of Agriculture, College Station.
*KYLE, H. C., 1896, I.
KYLE, J. A., 1890, I, Physician and Surgeon, 402 Carter Bldg., Houston.
*KYLE, T. M., 1893, III.
LAAKE, E. W., 1913, I, U. S. Dept. Agriculture, Box 208, Dallas.
LAMMERS, E. S., Jr., 1913, V, Westinghouse Elec. Co., East Pittsburg, Pa.
LANDA, L. M., 1907, V, Legal Dept., Auto Telephone Co., Chicago.
LANE, G. I., 1914, I, Valley Mills.
LANE, G. J., 1913, I, Farmer, Valley Mills.
LANGDON, Y. M., 1913, IX, Planter, Hutchins.
*LANGDON, W. F., 1911, IV.
LANGFORD, E., 1913, VII, Instructor in Drawing, College Station.
LANGSTON, J. A., 1912, I, Box 254, Station A, Dallas.
*LAUDERDALE, J. R., 1908, I.
LAUDERDALE, J. C., 1911, IV, Somerville.
LAW, F. M., 1895, I, Vice-President First National Bank, Houston.
*LAWLEY, L. P., 1902, I.
LEAR, J. E., E. E., 1909, Professor of Electrical Engineering, Northfield, Vt.
LEARY, EDGAR M., 1905, IV, Civil Engineer, with Mex. & N. W. R. R. Home address, Alvin.
LEE, D., 1911, IV, Tex. P. & L. Co., Dallas.
LEE, H. F., 1909, V, 41612 Orchard Ave., Los Angeles, Cal.
LEE, KNOX, 1908, V, 4214 Clifton Ave., El Paso.
LEGGETT, C. W., 1910, III, Chemist, Fidelity Cotton Oil Co., Houston.
LEGGETT, W. W., 1889, IV, Livingston.
LEHMANN, E. W., 1913, Iowa State College, Ames, Iowa.
LEMPERT, L. H., 1907, V, General Electric Co., Lynn, Mass.
LENERT, A. A., 1914, I, Veterinarian, David City, Neb.
LENERT, L. G., 1906, IV, Banker, Panama City, Fla.
LENZ, L., 1907, IV, Draftsman R. of W. Department S. P. R. R., Box 464, Houston.
LEROY, L. F., 1911, III.
LEVY, D. H., 1914, V, Draftsman, Texas P. & L. Co., Dallas.
LEWIS, F. R., 1894, IV, Farmer, Forney.
LEWIS, J., 1900, I, Veterinary Surgeon, Greenwood, Miss.
LEWIS, L. L., 1893, I. M. S., 1894, Professor of Zoology and Veterinary Science, Oklahoma, A. & M. College, Stillwater, Okla.
LEWIS, M. G., 1899, III.

LICHTE, F., 1906, VI, Merchant, Cleburne.
LIDIAK, J. P., 1913, III, Westinghouse Machine Co., 813 Holland Ave., Wilkinsburg, Pa.
LIENHARD, L. V., 1913, IV, Santa Fe R. R., Wellington, Kan.
LILLARD, S. A., 1910, IV, Manager Flour Mill, Decatur.
LILLARD, W. W., 1904, IV, Farming, Fairfield.
LILLY, R. C., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
LINDEMAN, C. E., 1903, III.
LINDEMAN, JAMES E., 1905, III.
LINDLEY, T. L., 1912, I, Wortham.
LINDNER, M., 1908, III, with Ed. Friedrich, 513 Dakota St., San Antonio.
LIPSCOMB, R. S., 1882, III, Physician, Grapevine.
LITTLEJOHN, R. G., 1891, IV, City Assessor and Collector, City Hall, Fort Worth.
LOCHRIDGE, C. F., 1913, I, Farmer, Saginaw.
LOCHRIDGE, J. L., 1910, IV, A. T. & S. F., Amerillo.
LOCKETT, N., 1903, IV.
LOCKETT, W. R., 1913, I, Cleburne.
LODAL, M. G., 1913, I, Manager Cunningham Dairy Farm, Gordon.
LOMANITZ, S., 1908, Chemist to Feed Coltrol, College Station.
LOONEY, L. P., 1910, I, Farmer, R. F. D. No. 1, Commerce.
LORENZ, J. H., 1913, III, Asst. Cashier First State Bank, Stockdale.
LOUWIEN, H., 1911, V, Secretary Citizens' Gas, Elec. and Htg. Co., Mt. Vernon, Ill.
LOVE, A. C., 1899, IV, Prof. Railway Engineering, A. & M. College, College Station.
LOVING, J. W., 1906, I, Ranchman, Jermyn.
LOWN, F. D., 1913, I, County Dem. Agent, Cotulla.
LUCKETT, W. H., 1891, I, Physician and Surgeon, 18 W. Thirty-seventh St., New York, N.Y.
*LUCKETT, W. M., 1894, III.
*LUHRSEN, C. W., 1900, IV.
LYLES, J. V., 1913, IV, Blue Grove.
McADAMS, E. E., 1911, IV, Instructor in Physics, College Station.
McANELLY, E. E., 1911, VII, Architect and Engineer, 1407-08 S. W. Life Bldg., Dallas.
McCALL, H. S., 1903, IV, Contractor, Austin.
McCARTY, S. C., 1915, IV, Draftsman, City of Taylor.
McCOLLUM, H. T., 1915, I, Valley View.
McCONNELL, J. P., 1911, IV.
McCONNICO, S. F., 1901, I.
McCORMICK, GEO., Jr., 1891, III, Asst. Superintendent G. H. & S. A. Ry., El Paso.
McCOWN, J. W., 1910, I, Farmer, Whitney.
McCULLOUGH, C. C., 1886, C. E., 1890, Lt. Col. U. S. Army, War Dept., Washington, D. C.
McCULLOUGH, R. E., 1912, IV, G. C. & S. F. Ry., Galveston.
McDANIEL, A. A., 1909, I, Surgeon, U. S. Army, 1st Lieutenant, Kingsville.
McDONALD, J. M., 1913, V.
McDONALD, W. A., 1910, V, Houston Light and Power Co., Houston.
McDONALD, H. F., 1895, III, Draftsman, General Land Office, Austin.
McDONALD, W. H., 1902, I, County Treasurer, Athens.
McDOWELL, C. H., 1912, I, Supt. Denton Exp. Station, Denton.
McDOWELL, J. C., 1914, I, Farm Overseer, Volga.
McEACHERN, C. A., 1912, I, Merchant, Route 1, Austin.
McELROY, T. E., 1908, I, Wm. Cooper & Newphews, Chicago, Ill.
McFADDEN, S. P., 1916, V, San Antonio.
McFARLAND, ARTHUR, 1905, III, U. S. Engineering Dept., 2121 Fifth St., Port Arthur.
McFARLAND, J. L., 1912, V, with General Electric Co., Schenectady, N. Y.
McGILBERRY, A. E., 1916, I, Stock Farming, Shiro.
McGINNIS, F. K., 1900, II, City Forrester, Dallas.
McGINNIS, N. M., 1908, II, Associate Prof. of Horticulture, College Station.
McGINNIS, P. T., 1914, I, Land Inspector, Box 652, Abilene.
McGRAW, M., 1911, III, Salesman, 2805 Routh St., Dallas.
McGREGOR, F., 1903, IV, Cattle Business, Lobo.
McGREGOR, J. I., 1916, I, Dairyman for Chamber of Commerce, Houston.
McILHENNY, J. L., 1910, IV, City Salesman Maverick-Clarke Co., 227 Woodlawn Ave., San Antonio.
McIVER, J. D., 1916, I, Irrigation Work for U. S. D. A., Mercedes.
McKAY, C., 1910, V, Manager Graphite Lubricator Co., 326 Diamond St., Pittsburg, Pa.
McKAY, G., 1910, V, W. E. & Mfg. Co., 2005 Euclid Ave., Cleveland, Ohio.
McKAY, G., 1903, III, Longview Iron Works, Longview.
McKNIGHT, O. J., 1903, IV, Cashier Dalhart Bank, Dalhart.
McLAVY, R. B., 1903, III, Bastrop.
McLENNAN, LAMAR, 1905, I, Loans, Hugo, Okla.
McLEOD, J. H., 1908, I, Arkansas Extension Department, Little Rock, Ark.
McMAHAN, L., 1911, V, Herrick Hardware Co., Waco.
McMILLAN, F. N., 1912, I, Calvert.
McMILLAN, L. B., 1911, III, 1912, M. E., 1913, Ch. E., H. W. Johns-Manville Co., New York City, N. Y.
McMILLAN, M. R., 1895, III, 1913, B. S., Physician and Surgeon, Health Dept., New York.
McMILLAN, S. A., 1909, I, Associate Professor in Agronomy, A. & M. College, College Station.
MacNAIR, H. J., 1887, III, Publisher, 16 E. Thirty-third St., New York.
McNEIL, J. C., 1896, IV, Ranchman, Spur.
McQUEEN, T. B., 1884, III, Accountant, Marlin.
*MABRY, R., 1889, IV.
*MACKENSEN, B. C., 1884, III.
MACKENSEN, L., 1885, III, Farmer, Houston.
MAEGDEN, C. E., 1904, I, Banker, Temple.
MALLOY, H. P., 1916, I, W. J. Davis & Co., Hereford Cattle Breeders, Jackson, Miss.
MANGUM, R. L., 1912, V, Draftsman Gulf Refining Co., Port Arthur.
MANSFIELD, B. J., 1912, VII, Architect and Business Manager, J. B. Clarkson Farms, Robstown.
MANSFIELD, H. R., 1903, IV, Eng. Dept. N. Y. C. & H. R. R., Room 3016, G. C. Station, New York City, N. Y.

MARBACH, A., 1907, IV, City Engineer's Office, New Braunfels.
MARBURGER, BERNARD, 1905, IV, Cistern.
MAREK, E. L., 1907, IV.
MARKHAM, E. L., 1902, IV, Asst. Engineer St. L. S. W. Ry., Pine Bluff, Ark.
MARKS, S. H., 1911, VI, Mgr. Brick Co., Corsicana.
MARTIN, E. L., 1899, IV, M. K. & T. Ry., Denison.
MARTIN, H. B., 1895, III.
MARTIN, C. A., 1911, I, Stock Farmer, Menard.
MARTIN, C. B., 1916, I, Bryan.
MARTIN, S. H., 1911, I, Rancher, Mason.
MARTIN, S. P., 1912, V, Bryan.
*MARTIN, W. C., 1898, II, M. S., 1901.
MARTIN, W. P., 1915, I, Farming, Rotan.
MASON, S. K., 1915, IV, Engineering Dept. Santa Fe, Beaumont. Home address, Sta. A, San Antonio.
MASSENBERG, W. G., 1894, IV, Engineer Gulf Lines, G. C. & S. F. R. R., Galveston.
MATTHEWS, H. F., 1903, IV, Sou. Pac. Ry., Beaumont.
MAXWELL, J. W., 1904, III, University Club, Salt Lake City, Utah.
MAXWELL, N. C., 1907, IV, Traveling Salesman. Home address, Hico.
MAYER, M. F., 1906, VII, Architect, San Antonio.
MAYERS, H. P., 1914, IV, Graduate Student, Boston.
MAYO, H. M., Jr., 1915, I, Houston.
MEAD, J., 1897, IV, Resident Engineer, St. L. B. M. & M. Ry., Bay City.
MEECE, B. L., 1912, V, 1108 Mills Bldg., El Paso.
MEEK, R. W., 1904, III, Signal Supervisor T. & N. O. R. R., 1713 La Branch St., Houston.
MELTON, W. B., 1914, I, Fletcher, N. C.
MENKE, C. H., 1910, Stockman, Hempstead.
MENKE, E. C., 1916, I, Stock Farming, Hempstead.
MERIWETHER, G. C., 1916, V, Mississippi River Power Co., Keokuk, Iowa.
MERIWETHER, W. T., 1891, IV, Tampico, Mexico.
*MERRETT, W. B., 1889, I.
METCALFE, J. D., 1906, IV, Rogers.
METCALFE, P. B., 1916, I, Stock Farming, San Angelo.
METCALFE, T. P., 1911, I, Scientific Asst. U. S. Dept. of Agriculture, Amarillo.
MEYER, J. V., 1916, II, Teaching High School, Winnsboro.
*MIDDLEBROOK, E. S., 1889, IV.
MIDDLEBROOK, R. M., 1891, III, Sales Manager, Gibbs Bldg., San Antonio.
MIKESKA, H. J., 1910, IV, Topeka, Kansas.
MILEY, J. H., 1896, IV, Lawyer, Smithville.
MILLER, A. C., 1914, I, New Ulm.
MILLER, C. S., 1880, President Ballinger State Bank and Trust Co., Ballinger.
MILLER, E. A., 1908, I, Horticulturist L. & N. R. R., 103 E. 4th Ave., Knoxville, Tenn.
MILLER, H. E., 1916, I, Farming, Bellville.
MILLER, H. J., 1883, Banker, Member 34th Legislature, Bellville.
MILLER, J. D., 1912, IV, Road Engineer, Itasca.
MILLER, M. J., 1911, IV, Fire Insurance Inspector, 111 W. Seventh St., Fort Worth.
MILLER, R. F., 1909, I, Asst. Prof. Animal Hus., Univ. of Cal., Davis, Cal.
MILLER, R. H., 1913, V, with General Elec. Co., Schenectady, N. Y.
MILLER, R. S., 1913, I, San Saba.
MILLER, V. W., 1914, V, 2213 1-2 Ave. E, Galveston.
MILLER, W. Z., 1913, I, County Agt. U. S. Dept. Agr., Edinburg.
MILLICAN, WAYNE, 1907, I, Farming, Corsicana.
MINEAR, SYLVESTER A., 1905, I, County Farm Demonstrator, Abilene.
MINTER, C. J., 1909, I, Bank Clerk, care First National Bank, Fort Worth.
MISTROT, G. A., Jr., IV, Mistrot-Curtis Co., 1504 Clay Ave., Houston.
MITCHELL, A., 1894, IV, Professor of Drawing, College Station.
MITCHELL, W. H., 1894, IV, Druggist, Holland.
MITCHELL, A. F., 1909, IV, Highway Engineer, Bastrop.
MITTMAN, E. F., 1902, IV, Draftsman Ft. W. & D. C. R. R., Fort Worth.
MOFFETT, G. C., 1916, I, Stock Farming, Chillicothe.
MOGFORD, J. S., 1916, I, Graduate Student and Assistant in Plant Breeding to the Experiment Station, College Station.
MOH, H. Y., M. S., in Agr., 1914, Manager of Teh Dah Cotton Spinning Co., 78 Ward Road, Shanghai, China.
MONROE, J. S., 1900, IV, Rio Grande City.
MONTAGUE, F. O., 1915, I, Experiment Station, College Station. Home address, Rockdale.
MONTEMAYOR, R. R., 1911, I, 2a Diaz Cavarrubias 22, Mexico City, Mexico.
MONTGOMERY, F. L., 1889, I, Lawyer, Muskogee, Okla.
MONTGOMERY, F. L., 1913, IV, Emhouse.
MOORE, C. B., 1911, I, Stock Farmer, Van Alstyne.
MOORE, F., 1902, I, Teacher, 410 W. Second St., Fort Worth.
MOORE, G. F., 1908, IV, 1st Lieutenant U. S. Army, C. A. C., Fort Adams, R. I.
*MOORE, G. G., 1903, IV.
MOORE, J. H., 1915, I, DeKalb.
MOORE, J. M., 1913, M. S., Food, Drug and Feed Clerk Dept. of Agr., Montgomery, Ala.
MOORE, R., 1892, I.
MOORE, T. E., 1892, I, 110 E. Craig Place, San Antonio.
MOORE, W. G., 1907, V, Manager Texas Power and Light Co., Paris.
MOORE, W. M., 1895, IV, Real Estate, Dallas.
MOORE, W. S., 1911, I, Rancher, West Point.
MORLEY, M. D., 1912, III, Stone & Webster, El Paso.
MORRILL, C. R., 1891, IV, Superintendent H. & T. C. R. R., Austin.
MORRIS, C. C., 1911, I, Demonstration Farm Agent, Sherman.
MORRIS, T. K., 1916, I, Teaching Marlin High School, Marlin.
MORTON, O. L., 1911, III, Draftsman, care C. D. Elder, St. Vrain, N. M.
MOSELEY, HAL., 1901, IV, City Engineer, Dallas.
*MOSELEY, W. E., 1883, III.

MOSER, C. OTTO, 1904, I, County Demonstration Agent, Dallas.
MOSER, E. F., 1912, I, Wholesale Butter, 823 Wilson Bldg., Dallas.
MOSES, ANDREW, 1916, Farming, Rogers.
MOSS, M. A., 1915, IV, Izora.
MOURSUND, A. F., 1895, IV, Fredericksburg.
MOURSUND, E. M., 1897, IV, I. & G. N. Ry., Palestine.
MOUSER, E. B., 1895, I, Physician, Electra.
MOWERY, I. H., 1915, I, City Milk and Dairy Inspector, care Dr. Hamner, Dallas. Home address, Almeda.
MULLINS, E. Y., 1879, President Southern Baptist Theological Seminary, Louisville, Ky.
MUNSON, T. A., 1910, IV, Civil Engineer, Angleton.
MUNSON, A., 1908, V, Civil Engineer, Angleton.
MUNSON, H. W., 1909, V, Stockman, Angleton.
MURPHY, W. M., 1916, IX, Southern Cotton Oil Co., Gretna, La.
MYERS, A. L., 1907, V, Mfg. Agt., 111 New Montgomery St., San Francisco, Cal.
MYERS, O. W., 1900, III, 406 Austin St., Palestine.
MYERS, W. G., 1894, III, Mining, Parral, Mexico.
NAGLE, J. M., 1911, IV, Asst. Co. Engineer, McKinney.
NASH, J. F., 1915, V, General Elec. Co., Schenectady, N. Y.
NAVE, G. F., 1912, III, Bookkeeper, Kenedy.
NEALE, R. B., 1908, I, Stock Farmer, Route No. 2, Tioga.
NEATHERY, D. E., 1892, I, Merchant, Farmersville.
NEFF, A. J., 1903, III, 1913, M. E., Engineer, American Public Service Commission, Abilene.
NEIGHBORS, A. H., 1911, VII, Physician, Seguin.
NESS, H., 1889, II, Horticulturist, Experiment Station, College Station.
NETHERWOOD, D. B., 1908, III, 1st Lieut., Aviation Section, Signal Corps, U. S. Army, San Diego, Cal.
NETHERWOOD, J. S., 1911, III, Draftsman Sunset-Central, Houston.
NEWELL, G., 1910, V.
NEWTON, G., 1898, I, Merchant, Thorndale.
NEWTON, J. W., 1912, VIII, Chemist Mag. Pet. Co., Beaumont.
NICHOLS, J. F., 1898, II, Attorney at Law, Greenville.
NICHOLS, J. R., 1889, I, Oculist, State Institutions, Austin.
NICHOLS, W. L., 1891, IV, Real Estate, Wilson Bldg., Dallas.
NISBET. W. R., 1916, I, Assistant County Demonstration Agent, Fort Worth.
NOLTE, R. W., 1913, V, 1505 State Street, New Orleans, La.
NORTH, W. G., 1908, I, Farmer, Yoakum.
NUGENT, C. W., 1913, VI, Accountant Am. Tel. and Tel. Co., 15 Dey St., N. Y.
NUSSBAUM, J. H., 1913, III, Erec. Eng. Allis-Chalmers Mfg. Co., 453 Sixty-fourth Ave., West Allis, Wis.
*O'BAR, J., 1893, I.
O'BRIEN, FLOY, 1916, V, 1231 North Pine, San Antonio.
O'CONNOR, D., 1913, I, Laredo.
O'CONOR, T., 1910, V, Laredo.
OGLESBY, G. B., 1894, IV, Farming, Gordonville.
OHLENDORF, W., 1913, I, Asst. State Entomologist, Austin.
OLDS, T. H., 1902, IV, Sao Paulo Light and Power Co., Sao Paulo, Brazil.
OLIPHANT, J. W., 1903, IV, Civil Engineer, with S. Gibbs, Huntsville.
OLIPHANT, L. N., 1913, IV, S. W. Tel. and Tel. Co., Dallas.
OLIVER, C., 1913, I, Lampasas.
OLSON, J. N., 1913, IV, 1609 Ave. L, Draftsman G. C. & S. F., Galveston,
OLSON, O. R., 1916, III, 5125 Liberty Ave., Pittsburg, Pa.
OLSON, P. H., 1916, IV, Western Electric Co., Dallas.
ORTH, W. A., 1913, VII, Bank Clerk, Yoakum.
ORR, W. R., 1906, IV, Grocer, Llano.
ORTIZ. J. A., 1892, IV, Stockman, 915 Zaragossi St.,f Laredo.
OVERSHINER, E. M., 1897, IV, County Judge, Abilene.
OWEN, A. G., 1916, IV, Double Bayou.
PALMER, G. C., 1915, I, Teacher, High School, Cotulla.
PAPE, G. H., 1904, IV, Cotton Exporter, Waco.
*PARK, C. M., 1896, IV.
PARKER, EARL, 1914, V, Carthage.
PARKS, L. D., 1911, IV, Eng. Dept., G. C. & S. F. Ry., Port Arthur.
PARR, V. V., 1914, I, Stock Farmer, Groveton.
PARSONS, B. C., 1893, II, Municipal Plant, Amarillo.
PATRICK, A. T., 1883, III, Oil Operator, Hotel Tulsa, Tulsa, Okla.
PATTERSON, E. B., 1916, V, Corsicana Gas and Electric Co., Corsicana.
PARTRIDGE, R. C., 1912, III, Farming, Munday.
PATTERSON, J. C., 1912, I, Dairy Specialist, State Dept. Agr., Austin.
PEARCE, R. B., 1911, IV, Student Univ. of Wis., Madison, Wis.
PEARSON, H. A., 1893, IV, Farmer, Troy.
PEDEN, L. T., 1904, IV, County Engineer, Houston.
PEDIGO, M. S., 1916, I, Farming, Valley Mills.
PENDLETON, DAVID E., 1905, IV, 819 Leland Ave., Chicago.
PENNER, W. A., 1906, V, Marathon.
PENNINGTON, R. E., 1884, I, Lawyer, Brenham.
*PERLITZ, W. E., 1893, IV.
PERKINS, P. R., 1916, I, Experiment Station Herdsman, College Station.
PERSONS, D. H., 1915, I, Farmer, Hico.
PESCAY, C. H., 1885, III, Adjuster of Fire Losses, 817 Hennen Bldg., New Orleans, La.
PETER, L. S., 1911, V, Westinghouse Elec. Co., Wilkinsburg, Pa.
PETERS, E. M., 1915, I, Hondo.
PETERSON, J. A., 1914, III, Engineer, El Paso.
PETERS, R. F., 1894, III, Interstate Commerce Commission, Interstate Bldg., Kansas City' Mo.
PFEUFFER, F. L., 1885, III, New Braunfels.
*PFEUFFER, W. O. R., 1888, I.

PFEUFFER, U. S., 1891, IV, Lumber Merchant, New Braunfels.
PHILLIPS, F. R., 1914, II, County Dem. Agent, Rusk.
PHILPOTT, W. B., 1884, III, M. S., 1890, care D. M. Derden, Amarillo.
PICKENS, D. B., 1914, V, Western Elec. Co., Dallas.
PICKETT, G., 1911, III, S. A. & A. P. Ry., Yoakum.
PIERSON, J. C., 1916, I, Farming, Haskell.
PINKSTON, L. A., 1916, III, Student University of Texas, Austin.
PIRIE, J. E., 1904.
PIRIE, J. H., 1906, V, 1st Lieut. Coast Artillery U. S. Army, Fort Strong, Mass.
PITTUCK, B. C., 1894, I, Assistant Manager Ferguson Seed Farm, Sherman.
POLANSKY, T., 1909, IV, Assistant Engineer Texas City Ter. and Trans. Co., Texas City.
POLK, W. A., Jr., 1895, IV, Wholesale Grocer, Dallas.
POOL, H. M., 1911, IV, U. S. Army, Camp E, S. Otis, C. Z.
PORTER, T. S., 1916, I, Teaching, Hillsboro High School, Hillsboro.
POTTHAST, A. H., 1911, IV, Physician, Weimar.
POTTS, A. T., 1907, I, Assistant Professor of Horticulture, College Station.
POTTS, R. J., 1906, IV, C. E., 1907, Potts-Moore Gravel Co., Waco.
*POULTER, R. J., 1899, II.
POWELL, L. H., 1914, IV, Santa Fe Ry., Amarillo.
PRICE, W. A., 1905, I, Farmer, Reagan.
PROCTER, J. H., 1910, V, 1913, E. E., Westinghouse Elec. Co., Pittsburg, Pa.
PUCKETT, D. M., 1911, IV, with Myers & Noyes, Dallas.
PUCKETT, F. S., 1907, I, care N. C. Dept. of Agriculture, Raleigh, N. C.
PUCKETT, J. W., 1904, IV, Buda.
RACK, E. C., 1915, V, Transformer Tester West. Elec. & Mfg. Co., 705 Lamar Ave., Wilkinsburg, Pa. Home address, Waco.
RADFORD, J. S., 1890, II, Manager Oriental Textile Mills, Houston.
RAGSDALE, J. W., 1890, I, Lawyer, Victoria.
RAMSAY, J. W., 1906, V, Instructor in Electrical Engineering, University of Texas, Austin.
RATCHFORD, W. P., 1892, III, Dep. U. S. Marshal, Box 1056, Austin.
RATHER, J. B., 1907, I, M. S., 1911, Arkansas Experiment Station, Fayetteville, Ark.
RAWLINS, H. E., 1898, III, Merchant, Lancaster.
RAY, P. F., 1916, II, Belton.
RAY, S. H., 1911, I, Bureau of Animal Industry, U. S. D. A., Washington, D. C.
READING, R. S., 1910, V, Richmond.
REED, W. N., 1914, I, Rancher, Sterling City.
REESE, G. W., 1907, IV, Bosque-Wensley Lead Co., 215 E. Eleventh Ave., Denver, Colo.
*REICHARDT, F. A., 1879.
RENNERT, F., 1888, I, Commission Merchant, Rennert-Millette Co., San Antonio.
REYNOLDS, W. L., 1915, III, Asst. Manager Livingston Lumber Co., Buck, Polk Co., Texas.
*RHODES, S. E., 1896, III.
RHOME, R. J., 1901, North Texas State Bank, Fort Worth.
RICE, D., 1882, III, Public Weigher, 1107 Lamar St., Houston.
RICE, E. R., 1902, III, Mission Garage, El Paso.
RICH, L. G., 1914, I, Odd Fellows Home, Corsicana.
RICHARDSON, J. S., 1916, I, Assistant County Demonstration Agent, Belton.
RIDENHOWER, R., 1903, IV, Hico.
RIDENOUR, C. A., 1909, IV, U. S. Junior Engineer, Dallas.
RIESNER, E. L., 1916, IV, Eagle Lake Gravel Co., 427 Commercial Bank Bldg., Houston.
RIFE, A. J., 1909, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
RIKE, H. M., 1893, IV, Abstractor, Haskell.
RILEY, A. A., 1909, IV, Assistant Engineer T. & N. O. R. R. Co., Y. M. C. A. Bldg., Houston.
RISIEN, G. W., 1903, IV, Draftsman N. Y. C. & H. R. Ry., 5 W. 129th St., New York City.
*ROACH, G. W., 1884, III.
*ROBBINS, A. J., 1911, III.
ROBERT, J. B., 1916, I, Stock Farming, Albany.
ROBERTS, C. A., 1913, I, Rice Farmer, Beaumont.
ROBERTS, F. A., 1913, IV, Lieut. U. S. Field Art., Fort Leavenworth, Kan.
*ROBERTSON, D. K., 1902, III.
ROBERTSON, J. M., 1916, III, Teaching, Masonic Home, Fort Worth.
ROBERTSON, R. L., 1909, I, Ranchman, Waelder.
ROBINSON, E. R., 1908, I, Ranchman, Dalhart.
ROBINSON, G. W., 1911, V, Private Garage, 2525 Mechanic St., Galveston.
ROBSON, C. G., 1898, II, President Southern Tel. Co., La Grange.
RODRIGUEZ, D., 1896, IV.
ROGAN, CHAS., 1879, Lawyer, Austin.
ROGERS, B. F., 1889, IV, Banker, Jefferson.
ROGERS, C. P., 1900, II, Attorney at Law, 723 Mills Bldg., El Paso.
*ROGERS, G. A., 1887, III.
ROGERS, R. A., 1878, Lawyer, Oklahoma City, Okla.
ROLLINS, A. P., 1906, IV, Cimarron, N. M.
ROLLINS, C. W., 1894, IV, Civil Engineer Neches Canal Co., China.
ROLLINS, H. M., 1897, III, Foreman Gulfport Creosoting Works, Gulfport, Miss.
ROLLINS, J. G., 1913, IV, Asst. Highway Engineer, Sulphur Springs.
ROLLINS, M. E., 1914, III, 2213 1-2 Avenue E, Galveston.
ROMBERG, C. B., 1912, III, Chief Engineer Ice, Light and Power Co., Henryetta, Okla.
ROSA, R. R., 1912, I, Deputy Nursery Inspector, Austin.
ROSE, W. F., 1894, III, Wholesale Plumbing and Heating Supplies, 429-31 Main Ave., San Antonio.
ROSEBOROUGH, W. D., 1909, IV, City Engineer's Office, Dallas.
VON ROSENBERG, H. C., 1913, V, Contractor, Yoakum.
VON ROSENBERG, H. J., 1912, VII, American Smelting and Refining Co., El Paso.
ROSENFIELD, J. L., 1916, IV, Engineering Department Santa Fe Ry., Galveston.
ROSENTHAL, H. H., 1896, IV, U. S. Treasury Dept., Austin.
ROSS, F. R., 1894, I, Physician and Surgeon, Houston.
ROSS, J. G., 1894, IV, Attorney at Law, Cold Springs.
ROSS, J. L., 1902, IV, Pelahachie, Miss.

ROSS, R., 1902, IV.
ROUNTREE, T. D., 1898, IV, Physician, Rockdale.
ROWELL, T. D., 1885, I, Attorney at Law, Jefferson.
RUBENKOENIG, H., 1904, III, Instr. Car and Locomotive Design Purdue University, Lafayette, Ind.
RUDASILL, W. S., 1890, IV, Real Estate Dealer, Box 94, Sherman.
RUDLOFF, E. W., 1911, V, Otis Elevator Co., Houston.
RUDOLPH, R. F., 1911, U. S. Junior Engineer Govt. Fleet, Benoit, Miss. Permanent address, Box 404, Vicksburg, Miss.
RUNGE, H. E., 1916, VI, Trion Cotton Mills, Trion, Ga.
RUNGE, J. F., 1914, I, Stock Farmer, Miles.
RUST, W. M., JR., III, Signal Department, Seguin.
RUTAN, W. L., 1915, IX, Engineer Texas Co., Box 303, Port Arthur.
SAMMONS, THOMAS B., 1905, Hardware and Saddlery, Mission.
SAMPSON, W. E., 1908, IV, Vice-President and Gen. Man. Texas Rock Co., Beaumont.
SAMUCH, L., 1902, IV, Merchant, Hallettsville.
SANDERS, J. L., 1915, I, Farmer and Rancher, Lavernia.
SANDERS, M. D., 1915, I, Hubbard.
SANDERS, P. L., 1903, IV, Controller Galvez Hotel, Galveston.
SANDERS, W. O., 1896, II, Manager Parker Lumber Co., Bryan.
SANFORD, C. E., 1911, IV, with Roach Manigan Paving Co., 811 State Bank Bldg., San Antonio.
SANSOM, G. W., 1915, VI, Teacher, Goliad.
SAPER, G. A., 1915, VIII, American Steel Foundries, Pittsburg, Pa. Home address, 1517 Prairie Ave., Houston.
SAUVIGNET, E. H., 1892, I, Physician, Laredo.
SAVAGE, C. H., 1915, I, Stock Farmer, Bailey.
SAWYER, H. A., 1916, IV, Highway Engineer, Longview.
SAWYER, R., 1882, III, Breeder of High Grade Hereford Cattle, Clarendon.
SAYERS, A. F., 1913, IV, Civil Engineer, 708-9 Stewart Bldg., Houston.
SCARBOROUGH, JOHN, 1912, IV, Mining Eng. Unsan, Chosen, Japan.
SCHADT, C. A., 1907, V, Merchant, Twenty-seventh St. and Avenue H, Galveston.
SCHAEFFER, R. E., 1908, III, Hardware Business, Schulenburg.
SCHAEDEL, C. T., 1912, IV, Bay City.
SCHAEFER, S. E., 1914, III, Shipping Clerk, 1924 Mitchell St., Waco.
SCHAWE, W. A., 1907, I, Ballinger.
SCHERER, C. L., 1898, IV, City Engineer, Beaumont.
SCHERER, W. A., 1896, II, Stockman, Anahuac.
SCHILLER, R. E., 1906, IV, C. E., 1908, Eng. Dept. M. K. & T., Dallas.
SCHLEY, C. C., 1910, V, Sulphur Springs.
SCHLOM, C. L., 1912, IV, Gulf Pipe Line Co., Houston.
SCHMIDT, C. L., 1890, III, Pierce-Fordyce Oil Association, Laredo.
*SCHMIDT, D. T. C., 1894, IV.
SCHMIDT, F. H., 1914, IV, Computor A, T. & S. F. Ry., Amarillo.
SCHMIDT. H., 1908, I, Veterinarian, Experiment Station, College Station.
SCHOLL, E., 1907, State Entomologist, Department of Agriculture, Austin.
SCHORNSTEIN, R. M., 1916, IX, Texas Company, Galveston.
SCHROEDER, E. A., 1911, VII, 1828 Avenue F, Galveston.
SCHROEDER, ERWIN F., 1905, I, Veterinarian, 15 Arthur St., Somerville, Mass.
SCHROETER, H., 1907, IV, Government Engineer, Cypress Mills.
SCHROETER, A., 1909, IV, Civil Engineer, 1821 Fillmore St., Topeka, Kan.
SCHROETER, R. R., 1913, IV, Engineer, Cypress Mill.
SCHUMACHER, H. C., 1892, IV, Wholesale Grocer, Houston.
SCHUWIRTH, W. C., 1914, V, Prop. Gulf Coast Elec. Co., Box 183, Corpus Christi.
SCHWAB, L. C., 1911, III, care Y. M. C. A., Milwaukee, Wis.
SCOFIELD, J. A., 1913, I, Stockman, Carey.
SCOTT, D. W., 1915, I, McKinney.
SCOTT, F. L., 1914, Teacher of Manual Training Central High School, 715 S. Jennings St., Fort Worth.
SENGELMANN, G. H. F., JR., 1915, I, Clerk at G. H. & S. A. Ry. Office, Schulenburg.
SEWARD, O., 1907, IV, Asst. City Engineer, Beaumont.
SEWELL, M. S., 1894, IV, Merchant, McGregor.
SHANKLIN, R. W., 1906, IV, Prairie Lea.
SHEARER, D. M., 1909, IV, U. S. Engineer, Box 404, Vicksburg, Miss.
SHEARER, T. R., 1912, I, Secretary New Era Gravel and Drainage Co., Houston.
SHERRARD, R. G., 1910, V, 2nd Lieut. U. S. Army, Plattsburg Barracks, New York.
SHERRILL, O. W., 1910, I, Farmer, Kerens.
SHIELS, R. T., 1910, V, Sales Engineer General Elec. Co., Chicago.
*SHIRES, F. N., 1897, III.
SHIRES, G. M., 1897, III, City Boiler and Elevator Inspector, City Hall, Houston.
SHIRLEY, A. L., 1884, I, Farmer and Merchant, Anna.
*SHIRLEY, M. W., 1889, III.
SHIRLEY, W. M., 1889, IV, County Treasurer, Collin County, McKinney.
*SHIRLEY, Z. M., 1888, III.
SHORT, A. K., 1900, I, Agr. Agent F. W. & D. C. Ry., Wichita Falls.
SHORT, J. C., 1916, IV, Bandera.
SHORT, J. L., 1893, I, Physician and Surgeon, 617 Kress Bldg., Houston.
SHROPSHIRE, L. O., 1912, V, County Surveyor, Plainview.
*SIGEL, R. C., 1909, III.
SIMON, R. B., 1913, V, Equipment Engineer, 5038 W. 23rd St., Cicero, Ill.
SIMPSON, J. H., 1901, IV, Deck Officer U. S. Bache Fijardo, Porto Rico.
SIMPSON, J. N., 1914, I, Trav. Cattle and Hog Buyer Union Meat Co., San Antonio.
SIMPSON, O. M., 1900, IV, Hardware, Callehan & Simpson, Jacksboro.
SIMPSON, S. H., 1909, IV, Cashier Simpson Bank, Columbus.
SINCLARE, W. C., 1916, V, Westinghouse Electric Co., 705 Lamar Ave, Wilkinsburg, Pa.
SINGLETARY, H. H., 1916, V, Denver Gas and Electric Co., Denver, Colo.
SINGLETARY, J. N., 1910, I, Instructor in Science, Longview High School, Longview.

SKAGGS, G. E., 1908, V, Assistant Engineer Bell Tel. Co., St. Louis. Mo.
SKEELER, F. J., 1910, V, Instructor in Physics, College Station.
SKEELER, L. J., 1915, VIII, Chemist for Sloss, Sheffield Steel and Iron Co., Flat Top, Ala. Home address, Orange.
SKEELER, W. J., 1916, I, Manager of Stark Farms, Orange.
SLAY, CLYDE, 1916, I, Farming, Italy.
SLAY, S. H., 1914, III, Frost.
SLEEPER, W. M., 1879, III, Lawyer, 714 N. Twelfth St., Waco.
*SLOSS, A. M., 1899, I.
SMITH, A. J., 1908, I, Farmer, Port Sullivan.
SMITH, A. U., 1895, III, Retail Sales Manager for Briggs Weaver Mach. Co., 307 N. Market St., Dallas.
SMITH, E. J., 1888, I, Attorney at Law, Denison.
SMITH, E. W., 1910, IV, Consulting Engineer, Apartado 205, Tampico, Tamps, Mexico.
SMITH, G. A., 1909, V, San Antonio Gas and Elec. Co., San Antonio.
SMITH, L. M., 1916, I, Hog Ranch, Tyler.
SMITH, M. W., 1915, V, Westinghouse Elec. Co., Wilkinsburg, Pa.
SMITH, T. L., JR., 1898, IV, State Agent, The Muncie Oil Engine Co., 15 Main St., Houston.
SMITH, T. M., 1901, I, Bookkeeper, Columbia.
SMITHAM, V., 1915, III, M. of W. Dept. M. K. & T., Denison.
SMITHER, R., 1894, III, Bookkeeper, Huntsville.
*SMYTHE, H. G., 1879.
SNEARLEY, C. L., 1911, V, Electrician Automatic Elec. Co., Chicago, Ill.
SNEED, G. L., 1898, I, Minister, 108 Cumberland St., Dallas.
SNIDER, J. B., 1914, I, Sec. Chamber of Commerce, Longview.
SOLES, C. B., 1899, III, Machinist I. & G. N. Shops, Palestine.
SORY, E. G., 1912, IV, S. W. Tel. Co., Dallas.
SOUTHER, S. C., 1912, I, Farmer, Rosebud.
*SPANN, E. W., 1885, III.
SPARKMAN, F. A., 1914, I, Teacher, Eldorado.
SPEER, R. H., 1894, IV, Stockman, Quanah.
SPENCE, E. V., 1911, IV, County Engineer and Surveyor of Jim Wells Co., Alice.
SPENCE, T. R., 1913, IV, County Engineer for Sutton Co.
SPENCER, F. C., 1915, IV, Athens.
SPENCER, T. C., 1914, IV, Athens.
SPENCER, W. W., 1911, III, Clerk Guaranty State Bank, Athens.
SPIVEY, M. C., 1908, IV, 1819 Avenue K, Galveston.
SRAMEK, J. N., 1916, III, Bryan.
STALLCUP, J. F., 1904, IV, Palestine.
STALLINGS, J. H., 1914, I, Graduate Student Ames, Ia.
STANDIFER, R. H., 1908, IV, Engineer for Fort Worth Stock Yards and Fort Worth Belt Ry. Co., 1720 Horley Ave., Fort Worth.
STANGEL, W. L., 1915, I, Instructor in Animal Husbandry, College Station.
*STAPP, W. E., 1904, IV.
STELZIG, E. H., 1914, I, Instructor in M. E., College Station.
STEPHENS, UEL, 1916, IV, Government Engineer, Box 404, Vicksburg, Miss.
*STERNBERG, E. H., 1897, IV.
STERNENBERG, PAUL, 1905, III, Otis Elevator Co., Houston.
STERNS, J. B., 1903, Civil Engineer Nona Mills Co., Leesville, La.
STEVENS, D. T., 1913, I, Bartlett-Collins Glass Co., Sapulpa, Okla.
STEVENS, R. R., 1910, IV, Engineer C. M. & S. P. Ry., Minneapolis, Minn. Home address, Clarendon.
STEWARD, W. W., 1888, III, County Surveyor, Kirven.
STEWART, J. E., 1912, IV, Stock Farming, Sandy.
STIMSON, O. E., 1910, IV, City Engineer's Office, Houston.
STINSON, L. V., 1904, IV, Civil Engineer and County Surveyor, Durant, Okla.
STONE, J. M., 1913, I, Stable Manager City of Houston, 1720 Mary St., Houston.
STONER, C. D., 1916, V, Mississippi River Power Co., Keokuk, Iowa.
STREET, GUS C., JR., 1905, I, Contractor, Houston.
STRIBBLING, S. R., 1915, V, Student M. I. T., 168 Huntington Ave., Boston, Mass. Home address, Waco.
STRIEBER, C. A., 1902, III, Machinist I. & G. N. Shops, 215 Trinity St., Palestine.
STROUD, M. L., 1914, I, Farming, Kaufman.
STUBBS, VAN HOOK, 1905, I, Banker, Wortham.
SVASTA, S. F., 1910, V, Western Electric Co., Cicero, Ill.
*SWAIN, M. S., 1888, II.
TABER, R. G., 1910, IV, Engineer S. & W. E. Co., Dallas.
TABOR, J. R., 1906, VII, Architect, Binz Bldg., Houston.
TALBOT, A., 1882, III, Planter, Calvert.
TANNER, CARL, 1916, I, Wolfe City.
TANNER, E. L., 1914, I, State Dept. of Agriculture, Austin.
TARVER, T. C., JR., 1904, IV, Consulting Engineer, 202-204 Beatty Bldg., Houston.
TAYLOR, A. B., 1913, I, Burnet.
TAYLOR, L. T., 1912, IV, Rodman G. C. & S. F. Ry. Co., Temple.
TAYLOR, M., 1911, V, Engineer Western Union Tel. Co., Dallas.
TELFAIR, W. H., 1909, V, Chief Electrician, The Texas Co., 912 Fifth St., Port Arthur.
TEMPLETON, B. O., 1912, V, Western Elec Co., Apt. No. 35, 400 W. 18th St, New York.
TERRY, L. H., 1911, VIII, Farmer, R. F. D. 1, Mesquite.
THALMANN, C. H., 1911, III, Ranch Manager, Bandera.
THANHEISER, C. A., 1901, IV, Superintendent M. K. & T. Ry., Sealy.
THANHEISER, L. O., 1911, V, San Antonio Gas and Electric Co., San Antonio.
THARP, P., 1910, IV, Attorney at Law, Stewart Bldg., Houston.
THAXTON, HAROLD, 1912, I, State Dept. of Agriculture, Austin.
THAXTON, R. C., 1916, I, Irrigation Experiment Station of the U. S. D. A., Mercedes.
THOMAS, J. B., 1911, III, Greenville.
THOMAS, M. F., 1901, III, Instructor and Graduate Student Cornell University, Ithaca, N. Y.
THOMASON, J. H., 1916, I, Farming, Huntsville.

THOMPSON, C. B., 1907, III, Milling Engineer, 917, S. Alameda St., Los Angles, Cal.
THOMPSON, T. E., 1910, IV, City Engineer's Office, San Antonio.
THOMSON, J. M., 1913, I, U. S. Indian Agency, Lame Deer, Montana.
THROWER, J. D., 1900, I, Producer of Anti Hog Cholera Serum, 608 W. 39th St., Kansas City, Mo.
TIGNER, J. B., 1913, VI, Duke.
TIGNER, J. H., 1915, I, Houston.
TILSON, M. D., 1886, III, Manufacturer and Merchant, Texarkana.
YILSON, P. S., 1888, I, M. S., 1894, Director Houston Laboratories, 215 1-2 Main St., Houston.
TILSON, W. H., 1903, IV, City Engineer, Plainview.
TINKER, E. B., 1914, IV, Bank Clerk, Hillsboro.
TODD, A. M., 1894, IV, U. S. Assistant Engineer, P. O. Box 404, Vicksburg, Miss.
TODD, CHAS. C., 1897, II. Attorney at Law, San Antonio.
TODD, D. H. B., 1911, V, Claim Adjuster P. & S. F. Ry., Amarillo.
TOLBERT, W. S., 1913, I, Farmer and Cattle Raiser, Happy.
TORTI, M. L., 1916, I, Stock Farming, Thishomingo, Okla.
TORRENCE, W. C., 1913, III, Ransome-Sevrence Lynotype Co., Waco.
TRACY, H. H., IV, Hardware, Tulia.
THREADWAY, S. J., 1907, IV, Resident Engineer with Calif. Highway Com., Forum Bldg., Sacramento.
TRENCKMANN, R., 1907, III, Fairbanks, Morse & Co., Beloit, Wis.
TRENCHMANN, W. A., 1878, Newspaper Publisher, Austin.
TRICKEY, W. W., 1911, IV, Engineer Bemis Co., 714 N. Pearl St., Dallas.
TRIGG, K. M., 1911, I, Stock Farmer, Bastrop.
TUCKER, D. H., 1913, V, Junior Engineer, Merlin, Ont., Canada.
*TULLER, W. L., 1883, III.
TURNER, J. M., 1915, I, Teacher, San Benito.
UECKERT, H. H., 1897, IV, Draftsman, M. of W. Dept., Sunset Route, Houston.
UNDERWOOD, A., 1907, IV, Civil Engineer, Houston.
UNDERWOOD, HARRIS, 1912, IV, Stockraising, La Porte.
VANCE, J. W., 1916, I, Stock Farming, Gouldbusk.
VAN AMBURG, T. A., 1909, IV, Pilot Engineer, Valuation, care Chief Engineer St. L. S. W. R. R., Tyler.
VAN ZANDT, K. M., JR., 1879, Vice-President and Manager Mercantile Banking Co., Apartado No. 1212, City of Mexico.
VAN ZANDT, R. L., 1890, IV, Governor Federal Reserve Bank, Dallas.
VICK, JNO. C., 1904, III, Miller, Bryan.
VINTHER, F., 1897, III, Georgetown.
VOELCKER, H. R., 1909, VII, Heating and Ventilating Engineer, 918 Fannin St., Houston.
VON ROSENBERG, F. C., 1884, III, Attorney at Law, Austin.
VON ROSENBERG, L. A., 1916, IX, Sanguinet and Staats, Fort Worth.
VOSSLER, J. M., 1914, V, 1703 McGowan Ave., Houston.
WALDEN, W. J., 1900, I, M. S., 1903, Attorney at Law, 703 Union National Bank Bldg., Houston.
WALKER, P. W., 1913, V, Ranchman, Littlefield.
WALKER, R. R., 1911, V, Second Trinity Oil Co., Trinity.
WALKER, W. T., 1906, VI, Farming, San Saba.
WALLACE, L. W., 1903, III, Professor Railway and Industrial Management, Purdue University, West Lafayette, Ind.
WALLIS, J. W., 1909, V, 1st Lieut. Coast Artillery, Fort Monroe, Va.
WALLIS, T. T., 1913, I, Farm Manager, Westerhoff.
WALZEM, L. F., 1913, III, New Braunfels.
WANGEMANN, A. E., 1890, I, Wholesale Grocer, Brenham.
WARD, A. L., 1910, I, Farmer, P. O. Box 423, Paris.
WARDEN. J. A., 1908, IV, 15th Cav. U. S. Army, Manilla, P. I.
WARDEN, T. B., 1903, IV, Merchant, Redwater.
WARREN, C. B., 1914, I, Farm Manager, Pharr.
WARREN, C. F., 1915, I, Farmer, Hewitt.
WASHAM, O. F., 1915, I, with Easby Pecan Co., 1400 S. Ninth St., Waco.
WASHBURN, H. A., 1906, IV, Draftsman, S. P. R. R., Houston.
WASHBURN, JOHN E., 1905, III, Assistant Master Mechanic National Carbon Co., 1523 Ridgewood Ave., Lakewood, Ohio.
WASHBURN, W. W., 1908, IV, Bridge Engineer City of Houston, Houston.
WASHINGTON, W. C., 1912, V, 2nd Lieut. U. S. Army, Fort Crockett, Galveston.
WATERS, J. J., JR., 1913, IV, Right of Way Appraiser S. L. & S. F. R. R., care Fifth Avenue Hotel, Agusta, Kan.
WATKINS, H. B., 1912, IV, Bowie.
WATKINS, R. C., 1895, IV, Superintendent G. H. & S. A., San Antonio.
WATKINS, W. A., 1892, IV, care Prof. J. C. Burns, College Station.
*WATSON, D. H., 1882, III.
WATSON, J. L., 1915, I, Teacher, De Leon. Home address, Stephenville.
WATSON, W. D., 1893, I.
WEAR, H. A., 1914, IX, Assistant Bank Cashier, Rogers.
WEATHERBY, E. P., 1903, III, Signal Engineer T. & P. Ry., Dallas.
WEBB, THOMAS C., 1905, IV, Stock Farming, Mart.
WEIDEL, J., 1893, IV, Valuation Engineer, A. T. & S. F. Ry. Co., Chicago.
WEINERT, H. G. H., 1913, I, Farmer, R. 1, Box 37, Seguin.
WEINERT, M. H., 1909, V, Principal High School, Seguin.
WELBORN, J. S., 1906, I, Cashier Citizens State Bank, Alvin.
WELBOAN, G. M., 1912, V, Palestine.
WELHAUSEN, C. B., 1891, III, Merchant, Shiner.
WELHAUSEN, P. H., 1905, III, Assistant Cashier First National Bank, Shiner.
WELLAGE, G. F., 1916, I, Farming, Eagle Pass.
WELLS, D. D., 1895, I.
WENDTLAND, W. A., 1912, III, Merchant, Shiner.
*WESSEN, J. M., 1883, III.

WESSENDORF, J. A., 1907, VI, Bookkeeper and Assistant Manager for J. A. Wessendorf, Richmond.
*WEST, T. B., 1887, III.
WHELAN, J. J., 1891, III, Machinist H. & T. C. Ry., Houston.
WHEAT, G. N., 1897, IV., Rock Springs.
WHEELER, A. C., 1905, I, Ranchman, Sue.
WHISENANT, W. H., 1899, II, Pharmacist, 23 Howard St., San Antonio.
WHITAKER, W., 1885, III, Oil Producer, Texarkana.
WHITE, G. R., 1895, IV, Stockman, Brady.
WHITE, J. E., 1916, V, Gainesville.
WHITE, T. F., 1913, I, Teacher of Agriculture, Sylacauga, Ala.
WHITENER, H. L., 1891, I, Physician, 2009 E. Grand Ave., St. Louis, Mo.
WHITESIDE, B., 1913, IV, Lott.
WHITFIELD, C. A., 1913, I, Farming, Cleburne.
WHITLOCK, E. H., 1886, III, General Superintendent The Sandusky Portland Cement Co., 818 Engrs. Bldg., Cleveland, Ohio.
WHITTET, A. B., 1908, III, Ordnance Office, War Department, Room 190, State War and Navy Bldg., Washington, D. C.
WHITTET, C. S., 1915, VIII, Chemist S. S. Steel and Iron Co., Flat Top, Ala. Home address, Anchorage.
WHITTET, H. E., 1909, V, Anchorage.
*WHITTLE, C. T., 1899, III.
WICKES, H. G., 1912, I, Student Ohio University, 207 W. Avenue, Columbus, Ohio.
WIGHT, A. T., 1895, IV, General Merchandise, Roxton.
WIGNALL, C. L., 1909, VII, Architect, 13-15 Brinkmann Bldg., Port Arthur.
WILLIAMS, I. L., 1903, III, Theater Mgr., Box 601, Snohomish, Wash.
WILLIAMS, L. D., 1897, IV, Bookkeeper Austin National Bank, Austin.
WILLIAMS, J. S., 1909, I, Farmer, Yazoo City, Miss.
WILLIAMS, R. S., 1910, V, Eck Dynamo and Motor Co., Newark, N. J.
WILLIAMS, T. S., 1911, III, care Industrial School, Racine, Wis. Home address, Cuero.
WILLIAMSON, H. H., 1911, I, Assistant in Extension Department, College Station.
WILLIFORD, C. L., 1911, III, Draftsman City Engineer's Office, Houston.
WILSON, ASHLEY F., 1905, IV, San Marcos Utilities Co., San Marcos.
WILSON, A. G., 1912, IV, Surveyor, McKinney.
WILSON, C. S., 1916, III, Lucey Manufacturing Co., Houston.
WILSON, W., 1893, IV, Attorney at Law and County Judge, Calhoun County, Port Lavaca.
WINDROW, R. J., 1906, IV, 1913, C. E., County Engineer, Waco.
WINKLER, A., 1900, I, Farmer, The Grove.
WIPPRECHT, W., 1884, I, B. S. A., 1899, Manager of the Bryan Press Co. and Business Manager A. and M. College, College Station.
WISDOM, F. L., 1896, IV, Bookkeeper for Frost-Johnson Lumber Co., Shreveport, La.
WISE, W. F., 1909, IV, Engineer M. K. & T. Ry., Denison.
WISRODT, C. E. P., 1915, I, Manager Wisdrot Grain Co., Rosenberg. Home address, Galvetons
WITCHER, L. V., 1916, II, Student University of Virginia.
WOOd, C. A., 1915, I, M. S., Associate Professor of Agronomy, College Station.
WOOD, E. G., 1911, IV, with Texas Bitulithic Co., 607 Scarbrough Bldg., Austin.
WOOD, W. M., 1888, IV, Assistant Disbursing Officer, I. C. C., Empire, Canal Zone.
WOODALL, HOWARD, 1905, III, Clerk P. O. Service, San Marcos.
WOODS, H. A., 1911, IV, Newton.
WOODS, HENRY S., 1905, V, E. E., 1907, Sales Agent General Electric Co., 510 Dwight Bldg., Kansas City, Mo.
WOODWARD, W. F., 1886, III, Banker, Denton.
WOOTEN, R. H., 1916, I, Stock Farming, Seatobia, Miss.
WORTHING, E. E., 1903, III, Signal Supervisor Sunset-Central Lines, Houston.
WRAY, JAY, 1908, V, Center Point.
WRIGHT, A. A., 1906, I, Stockman, Alfred.
WRIGHT, B. F., 1911, V, Merchant, 2112 Morrow St., Waco.
WRIGHT, H. L., 1886, III, Insurance, Palestine.
WURTZBACH, W. A., 1888, IV, Lawyer, San Antonio.
WYCHE, T. S., 1910, V, Superintendent Hydro. Elec. Station, Victor, Colo.
WYSE, IRA O., 1901, I, Dallas Union Depot Drug Store, Dallas.
WYSE, J. T., JR., 1905, I, 1635 Cortlandt St., Houston.
YAKEY, H. G., 1906, I, Farmer, Taylor.
YARBROUGH, R. W., 1901, III, Merchant and Planter, Red River Parish, Greening, La.
YEARY, H. E., 1915, I, Farm Manager, Farmersville.
YEARY, J. C., 1915, I, Farmersville.
YOUNG, M. H., 1907, VI, Farmer, Smithville.
YOUNG, M. H., 1913, I, Instructor in Agronomy, College Station.
YOUNG, R. L., 1915, V, E. E. 1916, Power and Light Co., Fort Worth.
YOUNGBLOOD, B., 1902, I, M. S., 1907, Director of Texas Agriculture Experiment Station, College Station.
YOUNGBLOOD, TOM, 1912, I, Stock Farming, Davis, Okla.
ZUBER, N. D., 1915, II, Citrus Canker Eradication Work, 624 Beatty Bldg., Houston.

NUMBER OF GRADUATES BY CLASSES.

Class of 1878	2
Class of 1879	23
Class of 1880	7
Class of 1881	1
Class of 1882	12
Class of 1883	8
Class of 1884	14
Class of 1885	10
Class of 1886	11
Class of 1887	10
Class of 1888	17
Class of 1889	19
Class of 1890	14
Class of 1891	16
Class of 1892	25
Class of 1893	15
Class of 1894	31
Class of 1895	27
Class of 1896	22
Class of 1897	27
Class of 1898	23
Class of 1899	22
Class of 1900	26
Class of 1901	19
Class of 1902	27
Class of 1903	36
Class of 1904	36
Class of 1905	39
Class of 1906	46
Class of 1907	45
Class of 1908	49
Class of 1909	47
Class of 1910	69
Class of 1911	98
Class of 1912	98
Class of 1913	114
Class of 1914	71
Class of 1915	92
Class of 1916	120
	1388
Counted twice	10
Total graduates	1378
Deceased	74
	1304

APPENDIX A.

CURRICULA FOR THE CLASS OF 1918.

Course numbers refer to descriptions in the 38th annual catalogue.

In the engineering Courses, juniors and seniors are required to attend an engineering assembly once a week.

I. COURSE IN AGRICULTURE.

GROUP A. AGRONOMY.

SENIOR YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Economics 3, Economic Organization *Or* Language 2, 4 or 6	3	0	Economics 3, Economic Organization *Or* Language 2, 4 or 6	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
			Textile Engineering 5 Cotton Classing	1	0
Elective	14	0	Elective	11	0
	21	2		19	2

GROUP B. HORTICULTURE.

SENIOR YEAR.

Language 2, 4 or 6 *Or* Economics 3 Economic Organization	3	0	Language 2, 4 or 6 *Or* Economics 3 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Horticulture 7 Pomology	3	2	Horticulture 9 Experimental	2	2
			Textile Engineering 5 Cotton Classing	1	0
Elective	14	0	Elective	12	0
	21	2		19	2

GROUP C. ANIMAL HUSBANDRY.

SENIOR YEAR.

Animal Husbandry 7 Feeding	3	2	Animal Husbandry 7 Feeding	3	2
Economics 3 Economic Organization *Or* Language 2, 4 or 6	3	0	Economics Economic Organization *Or* Language 2, 4 or 6	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
			Veterinary Medicine 5 Infectious Diseases	2	0
Elective	14	0	Elective	10	0
	21	2		19	2

SENIOR ELECTIVES—GROUPS A, B, C, E.

The Senior electives in Groups A, B, C, E, are to be chosen from the following list, subject to the advice and direction of a member of the Faculty designated for the purpose.

First Term.	Hours per week. Th.	Hours per week. Pr.
Agricultural Education 3 School Administration	3	0
Agricultural Education 4 Methods	3	0
*Agricultural Education 403 Rural Education	3	0
*Agricultural Education 405 Vocational	3	0
†Agricultural Engineering 2 Farm Machinery	2	2
Agronomy 5 Advanced Soils	2	2
Agronomy 6 Farm Management	3	2
Agronomy 8 Plant Breeding	2	2
Agronomy 12 Marketing Problems	3	2
Agronomy 13 Cost Accounting	2	2
Animal Husbandry 8 Advanced Judging	1	4
Animal Husbandry 10 Poultry Judging	2	2
Animal Husbandry 11 Poultry Feeding and Management	2	2
Biology 4 Plant Diseases	3	2
Biology 5 Plant Physiology	2	4
Biology 6 Bacteriology	2	4
Chemistry 6 Advanced Agricultural Analysis	2	6
Chemistry 7 Physical Chemistry	2	4
Dairy Husbandry 7 Breeding and Feeding	3	2
Entomology 3 Fruit Insects	2	2
*Forestry 301 Principles of Forestry	3	0
*Forestry 401 Dendrology	3	0
Horticulture 13 Landscape Design	3	4
Horticulture 14 History of Landscape Design	2	0
Military Science 401	3	2
Veterinary Medicine 6 Anatomy	3	6
Veterinary Medicine 7 Advanced Laboratory Methods	3	0

Second Term.	Hours per week. Th.	Hours per week. Pr.
Agricultural Education 5 High School Problems	3	0
Agricultural Education 6 High School Agriculture	3	0
*Agricultural Education 404 Agr. Extension and Demon.	3	0
Agricultural Engineering 402	0	2
†Agricultural Engineering 6 Farm Powers	2	4
Agricultural Engineering 12 Repairing	1	4
Agronomy 6 Farm Management	3	2
Agronomy 8 Plant Breeding	2	2
Agronomy 10 Crop Ecology		2
Agronomy 12 Marketing Problems	3	2
Agronomy 14 Anvanced Farm Management	1	4
Animal Husbandry 9 Live Stock Management	2	2
Animal Husbandry 11 Poultry Feeding and Man.	2	2
Animal Husbandry 12 Incubation and Brooding	1	4
Biology 4 Plant Diseases	3	2
Biology 5 Plant Physiology	2	4
Biology 6 Bacteriology	2	4
Chemistry 6 Advanced Agricultural Analysis	2	6
Chemistry 8 Advanced Agricultural	2	4
Entomology 4 Advanced Entomology		
*Forestry 302 Silviculture	2	2
*Forestry 402 Wood Technology	2	2
Horticulture 10 Citrus Fruits	2	2
Horticulture 11 Floriculture, Landscape Gardening	2	2
Horticulture 11a Floriculture	2	2
Horticulture 13 Landscape Design	3	4
Horticulture 16 Ornamentals	2	2
Military Science 402	3	2
Veterinary Medicine 6 Anatomy	3	6
Veterinary Medicine 7 Advanced Laboratory Methods	3	0

*Described in the 40th catalogue.

†Described in the 38th catalogue under the Department of Agronomy.

The amount of work to be elected, expressed in term hours, is as follows:

	First Term.	Second Term.
Group A	14	11
Group B	14	12
Group C	14	10
Group E	3	3

GROUP D. DAIRY HUSBANDRY.

SENIOR YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Animal Husbandry 6 Breeding and Feeding	3	2	Chemistry 9 Dairy	2	6
Biology 7 Dairy Bacteriology	2	4	Biology 7 Dairy Bacteriology	2	4
Dairy Husbandry 4 Creamery Management	3	2	Dairy Husbandry 5 Ice Cream Making	3	2
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
			Veterinary Medicine 5 Infectious Diseases	2	0
	18	10		19	14

And one of the following:

Economics 3 Economic Organization	3	0	Economics 3 Economic Organization	3	0
Language 2, 4 or 6	3	0	Language 2, 4 or 6	3	0
Military Science 401	3	2	Military Science 402	3	2

GROUP E. AGRICULTURAL ENGINEERING.

SENIOR YEAR.

First Term.	Hours per week. Th.	Hours per week. Pr.	Second Term.	Hours per week. Th.	Hours per week. Pr.
Agronomy 6 Farm Management	3	2	Agronomy 6 Farm Management	3	2
Economics 3 Economic Organization	3	0	Economics 3 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Agricultural Engineering 7 Farm Tractors	1	4	Agricultural Engineering 10 Farm Tractor Problems	1	4
Agricultural Engineering 8 Concrete on the Farm	1	4	Agricultural Engineering 11 Automobiles	2	2
Agricultural Engineering 9 Powers and Pumps	3	0	Agricultural Engineering 12 Repairing Farm Machinery	1	4
Elective	2	2	Elective	2	2
	14	12		13	14

D. ELECTIVE TWO-YEAR COURSE IN AGRICULTURE.

SECOND YEAR.

Course numbers refer to the 40th annual catalogue.

Eighteen term hours each term from the following, in addition to Military Science:

Agricultural Engineering 51 Irrigation and Drainage	1	4	Agronomy 52 Farm Equipment and Mgm.	3	2
Agricultural Engineering 53 Farm Machinery and Motors	2	2	Agronomy 54 El. Crop Production	3	2
Agronomy 53 Soils	3	2	Animal Husbandry 52 Animal Breeding	1	2
Animal Husbandry 51 Market Types	0	6	Animal Husbandry 54 Farm Poultry	1	2
Animal Husbandry 53 Breed Types	2	2	Animal Husbandry 56 Feeding	2	2
Biology 51 Zoology	3	2	Biology 52 Botany	3	2
Biology 53 Botany	2	2	Biology 54 Botany	2	2
Chemistry 51 Practical	3	2	Dairy Husbandry 52 Elementary Dairying	2	2
Dairy Husbandry 53 Farm Dairying	2	2	Entomology 52 Economic	2	2
Entomology 51 Systematic	2	2	Forestry 52 Elementary Forestry	3	0
Horticulture 51 Plant Propagation	3	2	Horticulture 52 Vegetable Gardening	3	2
Horticulture 53 Tree and Vine Fruits	3	2	Horticulture 58 Nut Culture	2	2
Horticulture 55 Spraying	1	2	Military Science 52	1	2
Military Science 51	1	2	Veterinary Medicine 52 Animal Diseases	3	2

IX. COURSE IN ARCHITECTURE.

SENIOR YEAR.

First Term.	Hours per week. Th.	Pr.
Architecture 40 History of Ornament	2	0
Architecture 43 Architectural Design	0	16
Architecture 45 Building Construction	0	4
Architecture 47 Freehand Drawing	0	4
Civil Engineering 14 Stresses	2	2
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
	8	26
**Or* Military Science 401	3	2

Second Term.	Hours per week. Th.	Pr.
Architecture 41 Business Practice	1	0
Architecture 42 Hist. of Sculpture and Painting	2	0
Architecture 43 Architectural Design	0	18
Architecture 45 Building Construction	0	4
Architecture 47 Freehand Drawing	0	4
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
	7	26
**Or* Military Science 402	3	2

VII. COURSE IN ARCHITECTURAL ENGINEERING.

SENIOR YEAR.

Architecture 44 Architectural Design	0	8
Architecture 46 Building Construction	0	11
Civil Engineering 14 Stresses	2	2
Civil Engineering 18 Reinforced Concrete	2	0
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
**Mechanical Engineering 3 Elem. Steam Eng.	3	0
	11	21
***Or* Mech. Eng. 5a Steam Engines and Boilers	2	0
**Or* Military Science 401	3	2

Architecture 35 Heating and Ventilating	1	0
Architecture 41 Business Practice	1	0
Architecture 46 Building Construction	0	16
Chemistry 10 Geology	4	2
Civil Engineering 23 Higher Structures	2	2
*Economics 4 Economic Organization	3	0
Electrical Engineering 6 Lighting and Wiring	1	0
English 6 Public Speaking	1	0
	13	20
for students who did not elect Language.		
**Or* Military Science 402	3	2

VIII. COURSE IN CHEMICAL ENGINEERING.

SENIOR YEAR.

First Term.	Hours per week.	
	Th.	Pr.
Chemical Engineering 5 Physical Chemistry	3	2
Chemical Engineering 6 Technical Analysis	2	6
Civil Engineering 15 Water Suppy Eng.	2	0
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 5 Steam Engines and Boilers	3	0
Mechanical Engineering 6 Engineering Mechanics	2	0
Mechanical Engineering 22a Engineering Laboratory	0	2
	16	10
**Or* Military Science 401	3	2

Second Term.	Hours per week.	
	Th.	Pr.
Chemical Engineering 5 Physical Chemistry	3	2
Chemical Engineering 6 Technical Analysis	2	6
Chemistry 11 History of Chemistry	1	0
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 5 Steam Engines and Boilers	3	0
Mechanical Engineering 6 Engineering Mechanics	2	0
Mechanical Engineering 22a Engineering Laboratory	0	2
	15	10
**Or* Military Science 402	3	2

IV. COURSE IN CIVIL ENGINEERING.

SENIOR YEAR.

First Term.	Th.	Pr.
Civil Engineering 13 Roofs and Bridges	4	8
Civil Engineering 15 Water Supply Eng.	2	0
Civil Engineering 16 Contracts and Specifications	2	0
Civil Engineering 17 Irrigation and Drainage	2	0
Civil Engineering 18 Reinforced Concrete	2	0
Civil Engineering 19 Field and Lab. Work	0	4
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 22a Engineering Laboratory	0	2
	16	14
**Or* Military Science 401	3	2

Second Term.	Th.	Pr.
Civil Engineering 13 Roofs and Bridges	0	4
Civil Engineering 19 Field and Lab. Work	0	4
Civil Engineering 20 Sewerage	2	0
Civil Engineering 22 Higher Structures	3	2
Civil Engineering 25 Modern Pavements	3	0
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Chemistry 10 Geology	4	2
	16	12
**Or* Military Science 402	3	2

HIGHWAY GROUP.

SENIOR YEAR.

First Term.	Hours per week. Th.	Hours per week. Pr.
Civil Engineering 13a Roofs and Bridges	2	8
Civil Engineering 16 Contracts and Specifications	2	0
Civil Engineering 18 Reinforced Concrete	2	0
Civil Engineering 19 Field and Lab. Work	0	4
Civil Engineering 421 Highway Laws, Economics, Organization	2	0
Civil Engineering 429a Bituminous Materials and Surfaces	4	0
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 22a Engineering Laboratory	0	2
	16	14
**Or* Military Science 401	3	2

Second Term.	Hours per week. Th.	Hours per week. Pr.
Civil Engineering 13 Roofs and Bridges	0	4
Civil Engineering 19 Field and Lab. Work	0	4
Civil Engineering 22 Higher Structures	3	2
Civil Engineering 422a Non-Bituminous Pavements	5	0
*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Chemistry 10 Geology	4	2
	16	12
**Or* Military Science 402	3	2

V. COURSE IN ELECTRICAL ENGINEERING.

SENIOR YEAR.

Electrical Engineering 8a Alternating Currents	3	4
Electrical Engineering 9a Electrical Machine Design	3	4
Electrical Engineering 10 Electric Railways	2	0
*Civil Engineering 16 Contracts and Specifications	2	0
Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 5a Steam Engines and Boilers	2	0
Mechanical Engineering 22a Engineering Laboratory	0	2
	16	10

Electrical Engineering 8a Alternating Currents	5	4
Electrical Engineering 9a Electrical Machine Design	1	4
Electrical Engineering 10 Electric Railways	2	0
*Electrical Engineering 11 Electric Power Distribution	2	0
Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0
Mechanical Engineering 5a Steam Engines and Boilers	2	0
*Mechanical Engineering 22a Engineering Laboratory	0	2
	16	10

*Members of the R. O. T. C. will substitute Military Science 401, 402 for these subjects.

COURSE IN MECHANICAL ENGINEERING.

SENIOR YEAR.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Chemical Engineering 1 Industrial Chemistry	3	0	Chemical Engineering 3 Metallurgy	3	0
Civil Engineering 7 Hydraulics	2	0	Civil Engineering 7 Hydraulics	2	2
*Economics 4 Economic Organization	3	0	*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Mechanical Engineering 7 Thermodynamics	4	0	Mechanical Engineering 8 Engineering Design	3	0
Mechanical Engineering 8 Engineering Design	3	0	Mechanical Engineering 9 Gas Engines	2	0
Mechanical Engineering 20 Machine Shop Practice	0	2	Mechanical Engineering 7 Thermodynamics	2	0
Mechanical Engineering 21 Engineering Design	0	4	Mechanical Engineering 21 Engineering Design	0	4
Mechanical Engineering 22 Engineering Laboratory	0	4	Mechanical Engineering 22 Engineering Laboratory	0	6
	16	10		16	12
**Or* Military Science 401	3	2	**Or* Military Science 402	3	2

VI. COURSE IN TEXTILE ENGINEERING.

SENIOR YEAR.

*Economics 4 Economic Organization	3	0	*Economics 4 Economic Organization	3	0
English 6 Public Speaking	1	0	English 6 Public Speaking	1	0
Textile Engineering 7 Yarn Manufacture	3	4	Textile Engineering 7 Yarn Manufacture	3	4
Textile Engineering 8 Designing	4	0	Textile Engineering 8 Designing	4	0
Textile Engineering 9 Power Weaving	2	4	Textile Engineering 9 Power Weaving	2	6
Chemistry 12 Dyeing	2	2	Textile Engineering 10 Yarn Manufacture	2	0
			Textile Engineering 11 Mill Management	2	0
	15	10		17	10
**Or* Military Science 401	3	2	**Or* Military Science 402	3	2

COURSE E. TWO YEAR COURSE IN ENGINEERING.

SECOND YEAR.

Course numbers refer to the 40th annual catalogue.

First Term.	Hours per week. Th.	Pr.	Second Term.	Hours per week. Th.	Pr.
Civil Engineering 51 Graphics	1	3	Civil Engineering 52 Surveying	3	4
Electrical Engineering 51 Applied Electricity	3	4	Electrical Engineering 52 Applied Electricity	3	4
English 53 Rhetoric and Composition	3	0	English 54 Rhetoric and Composition	3	0
Mathematics 53 Trigonometry	3	0	Mechanical Engineering 52 Elementary Mechanics	2	0
Mechanical Engineering 51 Elementary Mechanics	2	0	Mechanical Engineering 74 Power Transmission	3	0
Mechanical Engineering 73 Elementary Steam Engineering	3	0	Mechanical Engineering 78 Machine Shop	0	4
Mechanical Engineering 77 Pattern Making and Foundry	0	4	Military Science 52	1	2
Military Science 51	1	2			
	16	13		15	14

COURSE IN CHEMICAL ENGINEERING.

(Leading to the Degree of Chemical Engineer.)

FIFTH YEAR.

Chemical Engineering 11 Adv. Ind. Chemistry	2	12	Chemical Engineering 11 Adv. Ind. Chemistry	2	12
Chemical Engineering 12 Rarer Elements	2	4	Chemical Engineering 13 Chem. Preparations	2	4
Elective	6	0	Elective	6	0

COURSE IN CIVIL ENGINEERING.

(Leading to the Degree of Civil Engineer.)

FIFTH YEAR.

Civil Engineering 31 Astronomy	2	0	Civil Engineering 32 General Civil Engineering	2	2
Civil Engineering 11 Least Squares	2	0	Civil Engineering 14 Contracts	2	0
Civil Engineering 12 Bridge Designing	3	2	Civil Engineering 11 Geodesy	2	0
Civil Engineering 32 General Civil Engineering	2	2	Civil Engineering 12 Bridge Designing	3	2
Elective	6	4	Elective	6	4

COURSE IN ELECTRICAL ENGINEERING.

(Leading to the Degree of Electrical Engineer.)

(For students receiving their bachelor's degree after June, 1913.)

FIFTH YEAR.

First Term.	Hours per week.		Second Term.	Hours per week.	
	Th.	Pr.		Th.	Pr.
Electrical Engineering 31 Adv. Alternating Currents	3	0	Electrical Engineering 31 Adv. Alternating Currents	3	0
Electrical Engineering 32 Electric Machine Design	3	0	Electrical Engineering 34 Power Plant Design	3	0
Electrical Engineering 33 Gen. Electrical Engineering	3	0	Electrical Engineering 33 Gen. Electrical Engineering	3	0
Electrical Engineering 35 Laboratory	0	8	Electrical Engineering 35 Laboratory	0	8
Elective	6	0	Elective	6	0

COURSE IN MECHANICAL ENGINEERING.

(Leading to the Degree of Mechanical Engineer.)

FIFTH YEAR.

Mechanical Engineering Analytical Mechanics	3	0	Mechanical Engineering Analytical Mechanics	3	0
Mechanical Engineering Steam Turbines	3	0	Mechanical Engineering Gas Producers	3	0
Mechanical Engineering Refrigeration	3	0	Mechanical Engineering Power Plants	3	0
Mechanical Engineering	0	8	Mechanical Engineering	0	8
Elective	6	0	Elective	6	0

COURSE IN TEXTILE ENGINEERING.

(Leading to the Degree of Textile Engineer.)

FIFTH YEAR.

Textile Engineering 4 Yarn Manufacture	3	4	Textile Engineering 4 Yarn Manufacture	4	0
Textile Engineering 10 Weaving	2	4	Textile Engineering 13 Designing	4	0
Textile Engineering 13 Designing	4	0	Textile Engineering 15 Mill Management	2	0
			Textile Engineering 10	0	4
Elective	6	2	Elective	6	2

APPENDIX B.

DESCRIPTION OF SUBJECTS ACCEPTED AS ENTRANCE UNITS.

ENGLISH.

English a.—Language. Spelling, punctuation, grammar, sentence and paragraph structure; reading and practice in writing compositions based on the student's personal experience. A working knowledge of the language rather than a memory of definitions is required. 1 unit.

English b.—Rhetoric and Composition. The topics which are treated in standard high school text-books on rhetoric. Themes on subjects chosen from the student's reading. 1 unit.

English c.—Literature. The reading and study of English classics, as prescribed in the standard course of study in affiliated schools. The student's knowledge of these classics will be tested but will in every case be regarded as of less importance than the ability to write good English. 1 unit.

NOTE.—English *a, b,* and *c* are required. The above division into units is for the purpose of showing the ground to be covered and is not intended to imply that they are to be studied in that order. The work in language and composition ought to extend over all four years of the High School course and be a part of every subject taught.

FOREIGN LANGUAGES.

French a.—Pronunciation, grammar, with exercises, including irregular verbs. One hundred to one hundred and fifty pages of easy French prose. 1 unit.

French b.—Grammar and composition. Two hundred and fifty to three hundred pages of French prose. 1 unit.

German a.—Pronunciation, memorizing of easy colloquial sentences, elementary grammar with exercises. One hundred pages of easy German prose. 1 unit.

German b.—Grammar, translation into German of easy prose. One hundred and fifty to two hundred pages of easy stories and plays. 1 unit.

Spanish a.—Pronunciation, grammar, with exercises. One hundred to one hundred and fifty pages of easy Spanish prose. 1 unit.

Spanish b.—Grammar, translation into Spanish of easy prose. One hundred and fifty to two hundred pages of easy prose. 1 unit.

HISTORY.

History a.—American history. 1 unit.
History b.—Ancient history. 1 unit.
History c.—English history. 1 unit.
History d.—Medieval and modern history. 1 unit.
State adopted texts.

CIVICS.

Civics. 1 unit.
State adopted text.

MATHEMATICS.

Mathematics a.—Algebra through quadratic equations. Factors, products, positive integral powers of binomials, laws of exponents, common factors and multiples, simple equations of one or more unknown quantities, reduction and simplification of fractions, equations containing fractions, graphs, quadratics in one unknown. Solution of a large number of examples and putting problems into equations. 1½ units.

Mathematics b.—Plane Geometry. As much as is contained in standard text-books, including the proof of original propositions and the solution of numerical problems connected with plane figures. 1 unit.

Mathematics c.—Solid Geometry. The proof of propositions concerning the relation of lines and planes in space and abundant exercises in mensuration problems connected with solids and surfaces. ½ unit.

Mathematics d.—Plane Trigonometry. Definitions of the trigonometric functions of angles of any magnitude as ratios and a thorough drill on the fundamental relations. The solution of triangles with special emphasis and abundant practice, both with and without logarithms. ½ unit.

SCIENCE.

Science a.—Botany. The study of types from the chief divisions of the plant kingdom, including a training in the underlying principles of morphology, physiology and classification. One-third to one-half of the total assignment should be devoted to laboratory work. Laboratory note books containing a record of the work and experiments of the student should be submitted. 1 unit.

Science b.—Chemistry. A study of the more common elements and their compounds. One-half to two-thirds of the total assignment should be devoted to laboratory work. The student's laboratory note book should be submitted. 1 unit.

Science c.—Physics. The general principles of physical science especially those of mechanics, heat, electricity, and magnetism. One-third of the total assignment should be devoted to laboratory work. The student's laboratory note book should be submitted. 1 unit.

Science d.—Physiography. Any standard high school text. ½ unit.

Science e.—Physiology. Any standard high school text. ½ unit.

VOCATIONAL SUBJECTS.

The subjects of agriculture, bookkeeping, drawing, manual training, will be accepted provided they have been administered with the same degree of thoroughness as other accepted subjects.

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